

# **ENVIRONMENTAL ASSESSMENT RECORD**

NUMBER: CO-200-2002-0034 EA

PROJECT NAME: Recreation - Fourmile Travel Management Plan and RMP Amendment

PLANNING UNIT: Arkansas River, # 1

LEGAL DESCRIPTION: see document

APPLICANT: BLM and USFS

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## **I. Purpose of and Need for Action**

This chapter summarizes the purpose and need for this action. This includes describing the proposed action; project area description, summarizes the Pike and San Isabel National Forests Comanche and Cimarron National Grasslands (PSICC) Land and Resource Management Plan (Forest Plan) and the Bureau of Land Management (BLM) Royal Gorge Resource Management Plan (RMP) direction; decisions to be made, public involvement, key issues for the proposed action, and other issues.

### **A. Location and Setting**

The U.S. Forest Service (Forest Service), San Isabel National Forest, Salida Ranger District, and the BLM, Royal Gorge Field Office (RGFO), manage the planning area, referred to as the Fourmile Area. The area is bounded to the north by the Salida and South Park Ranger Districts' mutual boundary, to the east by the San Isabel National Forest boundary near the Chaffee County and Park County line, to the south by Cottonwood Creek within the Brown's Canyon Wilderness Study Area (WSA) and to the west by the Arkansas River.

The 100,622-acre area includes Forest Service (74%), BLM (13%), Colorado State Land Board (4%), and private land (9%). These lands are located in portions of Townships 12, 13, 14, and 15 South, Ranges 76, 77 and 78 West.

The Fourmile area consists of varying topography and ranges in elevations from over 13,000 feet in the Buffalo Peaks Wilderness Area to around 7500 feet along the Arkansas River. Vegetation is predominantly a mix of pinyon and juniper forests with open grassland parks found at the lower elevation and Douglas fir and ponderosa pine forests at the higher elevations. Large stands of aspen trees are also found in the area. Fourmile, Sevenmile, Trout, and Castle Rock Gulch creeks are the only perennial (flow year round) streams found in the area.

### **B. Background**

The Forest Service and BLM (also referred to in this document as "the agencies") assessed the Upper Arkansas River Valley condition in August 1999. This assessment was conducted to provide a basis for understanding the status, trends, and issues revolving around federal public land management within the Upper Arkansas, and identify management opportunities for public land value protection, restoration, production, and collaboration. (USDA Forest Service, 1999, p.1).

From the Upper Arkansas Assessment, the Fourmile Area was identified as a high priority for management attention to address recreation, soils, and forest health concerns. The increase in recreation use has had an impact on the natural resources in the area.

The current Forest Service policy limits travel to National Forest System Roads (NFSR) marked by a white arrow (Forest Order # 91-01, 9/3/1991). The BLM manages the area as a "limited" travel management area, meaning travel is restricted to existing roads and trails, or those present

prior to May 1996 (when the RMP was signed). The inconsistent policies between the agencies have made it difficult for the public to understand how to travel through this area.

This analysis will consider a travel plan for the Forest Service and BLM in this area. Through a BLM RMP amendment, this area would still be managed under the “limited” category, but travel would be restricted to designated roads and trails. The “white arrow” policy on the Forest Service would be changed to the new sign standards agreed to by state and federal natural resource agencies in Colorado. (Colorado Natural Resource Group, Travel Management Signs for Public Lands in Colorado)

At the request of the Forest Service and BLM, the public developed a proposal for travel management in the Fourmile Area. This diverse group, representing motorized, non-motorized, environmental, private landowners, ranchers, business owners and quiet users, reached consensus on what routes should be part of an overall transportation system. Their findings were submitted to the Forest Service and BLM as “A Citizens Proposal for Travel Management in the Fourmile Area”. The “Citizens Proposal” is the Proposed Action in this Environmental Assessment (EA).

### **C. Proposed Action**

The following is a summary of the Proposed Action. The detailed Proposed Action is in Chapter 2.

The Forest Service and BLM propose to designate and uniformly sign a system of roads and trails in the Fourmile Area. The authorized roads and trails (routes) will become part of both agencies official transportation system. This action identifies what types of use are authorized on each route, establishes information kiosk locations, imposes seasonal limitations on certain routes, authorizes certain non-motorized routes, and closes some unauthorized routes (referred to as Ghost Roads and Trails in the Citizens Proposal).

### **D. Purpose**

A system of routes would be identified and designated to provide reasonable public access and eliminate the establishment of unauthorized roads and trails. Another purpose is to reverse the downward trend of degraded watersheds in the Fourmile area. The proposal will reclaim roads, trails, and disturbed areas not part of the travel system; reduce the amount of sedimentation into the Arkansas River; and reduce conflicts between various user groups including private landowners.

The plan will also provide for the education of the public through the installation of consistent signs between agencies, development of information stations at major entry points, production of road and trail maps, and increasing community awareness to the problems and opportunities.

### **E. Need**

The Fourmile Travel Management Plan is needed to:

- Reduce the proliferation of user-created roads and trails
- Provide consistent signing between agencies so the public understands what routes can be traveled, the type of vehicles allowed, and when they are open for travel
- Provide reasonable public recreational access such as: camping, rock hounding, hunting, ATV and motorcycle riding, and sightseeing
- Provide seasonal closures where necessary for wildlife and soil benefit
- Reduce the density of roads and trails in areas to improve winter range habitat for certain wildlife species
- Provide for quiet use areas for both humans and wildlife
- Improve water quality by reducing the amount of sedimentation reaching live streams and the Arkansas River
- Eliminate or reconstruct poorly designed and located roads and trails
- Educate the public recreating in this area on user ethics, resource management, and user conflicts
- Provide maps, agency and volunteer patrols, and information stations at major access points to better inform the public on how to enjoy this area while protecting the natural resources
- Identify a travel system that can be adequately maintained under projected budgets or through alternative funding sources

## **F. Decisions to be Made**

The Forest Service, Salida District Ranger, and the BLM, Royal Gorge Field Manager will make a number of decisions to address the identified issues and to improve the overall health of the forest and public lands. The decision makers may select any alternative, or a combination of the alternatives. The selected alternative will address:

- What roads and trails\* will be the authorized transportation system?
- Limit motorized and mechanized travel to designated routes
- What types of use are allowed on each route?
- What routes should have seasonal limitations?
- What mitigation measures should be implemented?
- Locations for information stations
- Whether or not to restrict off-road travel to 100 feet from a designated route

\* A road is defined as a motor vehicle travel way over 50 inches in width. A trail may be motorized or non-motorized. For the purposes of this analysis and on-the-ground implementation, a motorized trail is less than 50 inches in width. A single-track trail is a narrow trail that can accommodate two wheeled motorized vehicles such as motorcycles. Although State and private lands are included in the analysis area, the decision to be made is only for Forest Service and BLM managed Federal lands.

## **G. Public Involvement**

On March 3, 2000 a project proposal scoping letter was sent to 176 interested or potentially affected individuals, groups, organizations, state and other Federal agencies, describing the

proposal and encouraging comments and participation in the planning process. Advertisements were placed in the local newspapers (Chaffee County Times and Mountain Mail), asking the public to be involved in the decision making process by either sending in comments or attending public meetings.

The March 23, 2000 public meeting in Buena Vista was attended by 164 people. At this meeting, people were encouraged to join one of the four work groups for those who wanted to be involved in the Fourmile Travel Management decision-making process. These four groups were Planning, Data Collection, Monitoring, and Technical Support. These were later consolidated into the data/monitoring and planning groups.

Over 30 individuals, making up the citizen's group, continued with the process. This included collecting and inventorying data, developing a decision form, and making decisions on which routes they want to see open or closed. The complete "Citizens Proposal for Travel Management in the Fourmile Area" (Citizen's Proposal) is incorporated by this reference and is located at the Salida Ranger District office.

During the summer and fall of 2000, the citizen data/monitoring group completed route inventories in the Fourmile Area. Over 200 routes were physically inventoried with photo documentation. They worked with the agencies to develop a comprehensive questionnaire/flow chart for making route recommendations based on Resource Concerns, Recreation Values, and Agency Concerns.

Using collected data and pictures, the flow chart, wildlife data, riparian area guidance maps, soil maps and cooperative tactics with the agencies and different user groups; they evaluated and prepared a recommendation for roads and trails in the Fourmile Area.

The citizens took the diverse interests, needs of motorized recreationists, environmentalists, ranchers, "quiet users", local residents and business owners, and through consensus building, created what they believe is a fair and representative Citizens Travel Management Plan. They based their decisions on a vision they developed for the area:

***"To create a travel plan which gives access to responsible users, reduces conflict among users, private property owners, and wildlife and improves public land health."***

The Citizens group met more than twenty times. Most of the meeting notes were posted on the Salida Ranger District's web page so all interested publics could see how the meetings were progressing.

The project was listed in the Schedule of Proposed Actions (SOPA), a Pike and San Isabel National Forests publication distributed four times a year to over 260 parties.

## **H. Forest Plan and Resource Management Plan Direction**

### **1. Forest Plan Direction**

National Forest System lands will be managed to comply with laws, regulations, Executive

Orders, direction in the Forest Service Manual, and Regional Acceptable Work Standards (Forest Plan, III-11).

The Pike and San Isabel National Forests; Comanche and Cimarron National Grasslands (PSICC) Land and Resource Management Plan (Forest Plan) as amended (October, 1984) provides long-term management direction for the Forest Service portion of the project area. Management direction is expressed in terms of both Forest Direction and Management Area Direction. Forest Direction consists of goals, objectives, and management requirements, which are generally applicable to the entire Forest Management Area Direction is specific to individual areas and is applied in addition to the Forest Direction.

Forest Plan goals are statements describing a desired condition to be realized sometime in the future. Tiered under these goals are Forest Plan Direction, and Standards and Guidelines. General Direction Statements specify the actions, measures, or treatments (management practices) to be done when implementing the activity or the condition expected to exist after the general direction is implemented. Standards and Guidelines outline the acceptable limits. These directions tier in the following order:

- 1. Forest Plan Goals and Objectives**
- 2. General Direction Statements**
- 3. Standards and Guidelines**
- 4. Management Area General Direction**
- 5. Management Area Standards and Guidelines**

The General Direction Statements, Standards and Guidelines, and Management Area Standards and Guidelines that most directly apply to this project are listed in Appendix A. Summarized below are key Forest Plan Goals and overall Management Area (MA) Direction.

#### Forest Plan Goals

- Provide a broad spectrum of developed and disperse recreation opportunities in accordance with identified needs and demands.
- Maintain approximately the current ratio of Recreation Opportunity Spectrum classes for dispersed recreation.
- Enhance and/or preserve scenic values along heavily traveled roads, use areas, and trails through management activities.
- Protect riparian areas and wetlands from degradation.
- Manage the transportation system for increased cost-effectiveness, efficiency, and utility.

#### MA 2B - Rural and Roaded-Natural Recreation Emphasis

This Management Area provides opportunity for outdoor recreation in roaded natural and rural settings, including developed recreational facilities and year-round motorized and non-motorized recreation. Motorized and non-motorized recreation activities, such as driving for pleasure, viewing scenery, picnicking, fishing, snowmobiling, and cross-country skiing, are possible. Conventional use of highway-type vehicles is provided for in facility design and construction.

Motorized travel may be prohibited or restricted to designated routes to protect physical and biological resources.

#### MA 4B - Management Indicator Species Habitat Emphasis

Wildlife management indicator species with compatible habitat needs are selected for an area. Vegetative characteristics and human activities are managed to provide optimum habitat for the selected species or to meet population goals jointly agreed to with the State Fish and Wildlife agencies. Recreation and other human activities are regulated to favor the needs of the designated species.

#### MA 4D – Aspen Management Emphasis

Maintaining and improving aspen sites is emphasized. Aspen is managed to produce wildlife habitat, wood products, visual quality, and plant and animal diversity. Aspen clones are maintained. Recreational opportunities available are semi primitive non-motorized and motorized or roaded natural. Some temporary or seasonal road and area restrictions are implemented to prevent disturbance of wildlife or improve hunting and fishing quality.

#### MA 5B - Big Game Winter Range Emphasis

The management emphasis provides for forage and cover on big game winter ranges. Winter habitat for deer, elk, bighorn sheep, and mountain goats is emphasized. New roads other than short-term temporary roads are located outside of the Management Area. Short-term roads are obliterated in one season after intended use. Existing local roads are closed and new motorized recreational use is managed to prevent unacceptable stress on big game animals during the primary big game use season.

#### MA 6B – Livestock Grazing Emphasis

The area is managed for livestock grazing. Investments are made in compatible resource activities. Dispersed recreational opportunities vary between semi primitive non-motorized and roaded natural. Management activities are evident but harmonize and blend with the natural setting.

#### MA 8B - Primitive Wilderness Opportunities Emphasis

The management emphasis provides for the protection and perpetuation of natural biophysical conditions. On-site regulation of recreational use is minimal. Travel is cross-country or by use of a low-density constructed trail system. Motorized use is prohibited.

#### MA 9A - Riparian Area Management Emphasis

Management of all the riparian area ecosystem components is emphasized. These components include the aquatic and riparian ecosystems and adjacent ecosystems that remain in

approximately 100 feet from both edges of all perennial streams and from the shores of lakes and other still water bodies. All of the components are managed together as a land unit comprising an integrated riparian area.

The goals of this Management Area are to provide healthy, self-perpetuating plant communities, meet water quality standards, provide habitats for viable populations of wildlife and fish, and provide stable stream channels and still water-body shorelines.

## **2. BLM Resource Management Plan Direction**

The BLM Royal Gorge Resource Management Plan (RMP) as amended (May 13, 1996) identifies future management of lands and resources administered by BLM in the Royal Gorge Planning Area. The RMP was prepared in accordance with planning regulations issued under the authority of the Federal Land Policy and Management Act of 1976 (FLPMA).

This 1996 RMP updated and superseded all previous existing land use planning documents and all amendments in the RGFO. The RMP provides the overall framework for managing and allocating public land resources and uses in the planning area over the next 15 to 20 years. The RMP makes specific recommendations in regards to transportation planning. The decisions found in the RMP are what are driving the completion of the Fourmile Travel Management Plan.

On February 3, 1997, the BLM amended all RMPs to include the new Standards for Public Land Health. Below are those Standards, along with some of the Recreation Guidelines that are to be applied to those Standards. A complete list of the Recreation Guidelines is in the Project File.

### **Standard 1: Upland Soils**

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, landform, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

1. Manage recreational activities to maintain sufficient vegetation on upland areas to protect the soil from wind and water erosion and to buffer temperature extremes.
2. Reduce stream crossings to the minimal number dictated by the topography. Reduce sedimentation and compaction associated with stream crossings.

### **Standard 2: Riparian Systems**

Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat, and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

1. Minimize disturbances and manage recreation use in riparian areas to protect vegetation, fragile soils, springs, and wetlands.

2. Plan and locate routes, trails, and developments away from riparian and wetland areas, and highly erosive soils.
3. Manage watercraft types and uses as appropriate to protect riparian systems and water quality from impacts.

### Standard 3: Healthy Plant and Animal Communities

Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitats potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

1. Manage recreational use on public lands to promote the survival and health of native plants and animals.
2. Protect against the establishment or spread of noxious weeds.
3. Protect wildlife habitat by preserving connectivity and avoiding fragmentation.
4. Minimize wildlife disturbances and artificial attractions such as feeding wild animals or improper disposal of garbage.
5. Protect plant and animal communities by limiting recreational use by type, season, intensity, distribution, or duration.

### Standard 4: Special Status and Threatened and Endangered Species

Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

1. Protect habitat for Federal and state Threatened and Endangered Species and other special status species.

### Standard 5: Water Quality

The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

1. Manage recreational uses in coordination with other uses on public lands to achieve or exceed applicable water quality standards.
2. Control water quality impacts resulting from recreational use, such as human waste, trash, and other elements.

## I. Key Issues

Issues are defined as concerns about the potential effects of the proposed action. Issues about the proposal were solicited from all interested parties as well as from the agencies' interdisciplinary (ID) planning team of resource specialists. From the comments, three key issues were identified.

### **1. Reasonable Access**

Keep reasonable access open to the public for such things as camping, sightseeing, hunting, ATV riding, jeeping, motorcycling, horseback riding, mountain biking, rock-hounding, rock climbing, and agency needs for forest products, grazing practices, and fire suppression, etc.

### **2. Improve Public Land Health**

Many roads and trails are located in the bottom of drainages that cause a reduction of vegetation and increases stream bank erosion. Erosion and siltation into the streams are causing the Fourmile, Nathrop, and Salt Creek watersheds to be placed on the state's listing of degraded watersheds. Riparian areas are being impacted from improper recreational use. Most of the area is accessible by vehicles year-round. This can cause additional stress to wildlife. The use of vehicles during snowmelt causes excessive erosion and damage to the road system.

### **3. Resolve Conflicts**

Recreationists are creating and using new roads and trails at an increasing rate. The Forest Service and BLM have different travel management policies and the area is not well signed. The public has a difficult time determining what roads and trails are open for use. Too many roads, either going through or running adjacent to their property, affect private property owners. Roads or trails making it difficult for people to escape the noise of vehicles crisscross too many areas.

## **J. Other Issues**

The ID team reviewed the Forest Plan and BLM RMP, along with public comments and developed a broader list of the issues, concerns, and opportunities associated with the proposed action. This broader list of concerns is addressed in Chapter 3, but they are not key criteria in the analysis and comparison of the alternatives.

## **K. Issues Not Selected for Detailed Analysis**

The following elements are not carried forward into the analysis for the reasons described below:

### **1. Air Quality**

Air quality is not discussed because the effects of the proposed action and the alternative are expected to be minimal and potentially long-term positive. Road reconstruction, restoration, and maintenance work will put somewhat more dust and hydrocarbons in the immediate airshed on a short-term basis. In part, this will be mitigated by dust mitigation activities and other best management practices. Restricting off-route use will minimize user-created routes that may contribute to more dust in the air for a localized area. It will also concentrate localized hydrocarbon emissions from motorized use to the travel corridors. Route maintenance activities, including route stabilization and hardening, should help limit the amount of dust raised.

## **2. Prime and Unique Farmlands**

There are no “prime and unique” farmlands in the project area.

## **3. Environmental Justice**

Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires all Federal agencies to incorporate environmental justice into their mission. Neither the proposed action nor the alternatives would disproportionately affect minority or low-income populations. Therefore, an environmental justice analysis is not triggered and the concept is not discussed further in this document.

## **4. BLM Areas of Critical Environmental Concern (ACEC)**

BLM considered the Browns Canyon ACEC under Sec. 202(c) (3) of FLPMA and found the area was eligible. The area is managed as an ACEC because of its scenic and wildlife values. This area includes all of the Browns Canyon Wilderness Study Area (WSA) recommended to Congress as wilderness for its unique naturalness character and primitive recreation, water related recreation, and scenic and visual qualities. In addition, the public lands in the Sugarloaf Mountain area are included. The bluffs in the area have been identified as having quality bighorn sheep habitat values. Refer to the WSA section of Chapter III for detailed information.

## **5. Inventoried Roadless Area Management**

There are two inventoried roadless areas (IRA) within the Fourmile Planning area; one located on the north end including the Buffalo Peaks Wilderness and a portion abutting the wilderness; and the second located primarily south of Highways 24/285 and west of County Roads 187 and 185. The IRAs only affect National Forest System lands. The IRAs are 28,623 acres or 28.4 percent of the planning area. Refer to the Roadless Area map in Appendix E.

Inventoried roadless areas are defined as areas identified in a set of inventoried roadless area maps, contained in Forest Service Roadless Area Conservation, Final Environmental Impact Statement (FEIS), volume 2, dated November, 2000, which are held at the National headquarters of the Forest Service, or any update, correction, or revision of those maps. Management of IRAs can be found in Forest Service Manual 1920 Land and Resource Management Planning.

In the Roadless FEIS, two types of roads are discussed – classified and unclassified. A classified road is a road wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access, including state and county roads, privately owned roads, National Forest System roads, and other roads authorized by the Forest Service (36 CFR 212.1). An unclassified road is a road on NFS lands that are not managed as part of the Forest transportation system such as unplanned roads, abandoned travel ways and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization (36 CFR 212.1).

The north IRA does not have any roads that are currently being used. A few decades ago, a road did access a short distance into the southern end of the IRA. This road was abandoned with barriers and reclaimed naturally.

The southern IRA has several classified roads and many unclassified roads within its boundaries. Classified roads can continue to be authorized. This IRA allows for road reconstruction and construction of both classified and unclassified roads but with strict limitations; i.e., a road is needed for critical resource restoration and protection, and; a road realignment is needed to prevent resource damage by an existing road that is deemed essential for public or private access, management, or public health or safety, and where such damage cannot be corrected by maintenance. Most of the existing unclassified roads do not fall within these limitations and therefore can only be used for trails (travel routes 50 inches wide or less), or it must be reclaimed.

The IRAs contain important environmental values that warrant protection by eliminating unclassified roads, and classifying a few that would meet the seven criteria outlined in FSM 1925.04b (Interim Directive No. 1920-200101).

Three roads most likely meet the criteria identified above for construction or reconstruction. They are the road coming out of Chinamen Gulch 300GR13D, the road that completes the loop on Bald Mountain and a portion of the 300 C road. All other existing unclassified roads will either be rehabilitated or converted to trails. Individual alternatives and their associated maps identify what routes will be rehabilitated or converted to system trails.

The potential decision on these three roads vary by alternative, however, any decision selected will be consistent with the Roadless Policy.

## **6. Hazardous and Solid Waste**

The present network of extensive roads and trails within the planning area are occasionally used by the public for waste disposal. Dumping most frequently involves household solid waste including trash, furniture, appliances, tires and yard wastes. Periodically, hazardous or regulated materials that could present a health or safety hazard to the public land users are dumped in the area. Oils, paints, unknown flammable liquids, dynamite and unknown but suspicious solids are found annually.

Increasingly, isolated public lands accessible by seldom used roads are used for criminal activities, especially the manufacture of methamphetamine. This type of use is of considerable concern because drug lab wastes are disposed of on site, usually on or near the road to minimize the amount of time spent in the area by the drug lab operator. Abandoned wastes usually include highly explosive compounds like ether and highly toxic materials like red phosphorus or lithium. Occasionally, compounds are abandoned that may explode when exposed to air by a curious passerby. Even if recreational users aren't injured on these sites there is always potential for contamination of groundwater or impacts upon wildlife or livestock in the area.

Dumped wastes must be cleaned up by the agency managing the property. Hazardous or regulated wastes must be disposed of as prescribed by state or Federal law. Disposal is time consuming and expensive. Other materials can be transported to a local landfill for disposal. Criminal activities require investigation by law enforcement, usually agency Rangers or Law Enforcement Officers. All of these activities divert employee time and available funding from what might be seen as a better use.

The existing situation leaves open for public use the highest number of roads and trails. Dumping activities can be expected to be highest in this alternative. Isolated spurs, redundant roads and areas easily accessed from an improved road system are attractive to that element in society that believes it's ok to dump unwanted material on public lands. This alternative would logically present the highest potential for a human health and safety risk and risk of release to the environment of regulated or hazardous materials.

Solid waste dumping that does not present a health or safety threat would likely not be cleaned up as rapidly or as completely as something that did present a health or safety risk. Over time, it can be expected that local, unauthorized dumping areas will continue to be used and new areas developed.

Closing of dead-end trails and redundant roads will reduce the areas that are likely to be used as dump areas, at least from what exists currently. Solid waste dumping that does not present a health or safety threat would be cleaned up, but at a lower priority than dumping that does present a threat. The result will be, in time an increase in solid waste found in the area.

Solid waste dumping that doesn't present a human health or safety threat might not be cleaned up as rapidly as something that does present a threat. The result might be that because of limited funds and manpower, we may see an increase in amount of inert solid waste left on the public lands, especially in remote locations.

## **II. Alternatives Including the Proposed Action**

The National Environmental and Policy Act (NEPA) Regulations (40CFR 1502.14) require rigorous exploration and objective evaluation of reasonable alternatives. According to NEPA, Federal agencies are to include and discuss appropriate measures to mitigate environmental impacts that could result from implementing a proposed action.

This chapter examines a range of alternatives to the Proposed Action, each having different environmental impacts and protection measures. Alternatives were developed to address issues identified in Chapter 1 and to meet the current management prescriptions associated with the Forest Plan and the RMP.

Actions identified in the following alternatives reflect a broad spectrum of travel management opportunities and provides for varying degrees of user experiences. The Travel Management Plan and subsequent analysis will allow management solutions designed to conserve soil, wildlife, water quality, native vegetation, heritage resources, and other resources, while providing for a mix of recreational travel opportunities. A Forest Supervisor's Order/BLM RMP amendment will be prepared to implement the travel regulation changes.

### **A. Description of Alternatives**

This section describes three alternatives: No Action Alternative (A), Proposed Action (B), and Alternative C. The alternatives described cover a spectrum of travel opportunities and

experiences from driving for pleasure, to all levels of ATV challenge, to solitary forms of non-motorized travel, and extreme jeeping. **Refer to the enclosed maps identifying roads and trails by alternative.** The main difference between the various alternatives are listed below:

- The No Action alternative would authorize **253** miles of travel routes. This includes **242.5** miles of motorized routes and **10.5** miles of non-motorized trails. Current level of management intensity would not change. The widest spectrum of uses would occur under this alternative.
- The Proposed Action would authorize **194** miles of travel routes. This includes **160** miles of motorized routes and about **34** miles of non-motorized trails. This alternative blends motorized and non-motorized recreational opportunities more than the other alternatives.
- Alternative C would authorize **142** miles of travel routes. This includes **106.2** miles of motorized routes and **35.8** miles of non-motorized trails. Opportunities for motorized recreation would be reduced the most under this alternative. Resource values would be afforded greater protection.

## **B. Alternatives Considered but Dropped from Further Analysis**

### **Authorized roads in the Roadless area**

Alternatives were discussed that would have made existing user created roads in the roadless area part of the authorized road system. This was dropped from consideration due to the conflict with the current roadless area direction, with the exception of the three roads discussed in Chapter 1 under Inventoried Roadless Area.

### **New routes across State Lands**

Consideration was given to designating new routes across State Lands. However, this decision is outside of the agencies' jurisdiction.

## **C. Actions Common to All Alternatives**

- Install standard travel management signs developed by the Colorado Natural Resource Group. These signs include a Trail sign and a Road Use sign. These signs will be used to designate routes. They will be located throughout the travel management area and would be found at trailheads, intersections, and other locations necessary to remind the user where they are and the types of uses allowed.
- Motorized and mechanized travel will be restricted to designated roads and trails. A designated route will be defined as one being signed open to a particular use on the ground, and/or is printed as open on the Fourmile Area Travel Map.
- FS Special Use Permits and BLM Special Recreation Permits would continue to be issued by the authorized officer on a case-by-case basis.
- Individuals or groups with permits (e.g., livestock operations, mineral exploration and

development, outfitter and guide operations, recreation events, utility easements/ rights-of-way, etc.) are allowed to access their permitted area. When and how the areas are accessed is set in the permit or annual operating plans.

- Access would be provided to private inholders, as required by Section 1323(a) of the Alaska National Interest Lands Conservation Act (P.L. 96-487; 16 U.S.C. 3210).
- There are 19 miles of routes on Colorado State Land (7.5 miles of authorized routes) and 58 miles of routes on private land. Opening, closing or modifying these routes are outside the scope of this plan.
- Any Federal, state, local official, or member of a rescue organization or fire-fighting organization, in the performance of an official duty related to emergency search and rescue, and/or fire suppression, would be exempt from travel restrictions, except in Wilderness or Wilderness Study Areas (Title 36 CFR 261.50 (e), Forest Service Manual 2355.32, Region 2 Supplement 2300-93-7) and Sec. 603(2) of FLPMA.
- All Federal and Colorado State laws applying to motorized vehicles are subject to enforcement. Title 36 CFR 261.12 and 261.13 regulate the operation of motorized vehicles on and off National Forest System Roads, respectively. The operation and use of vehicles on BLM lands is regulated by 43 CFR 8340.
- Non-motorized, non-mechanized cross-country travel will be allowed.
- Current snowmobile travel rules and regulations will not be affected under this plan.
- All roads and trails not identified as open under each alternative will be closed and either rehabilitated or allowed to naturally rehabilitate.

#### **D. Actions Common to the Proposed Action and Alternative C**

- Develop at least nine kiosks to provide users with the necessary information needed to understand the travel system, rules and regulations, user ethics, such as Tread Lightly and Leave No Trace, and other information pertinent to those recreating in the area. The location of these kiosks will be at the following intersections:
  - County Road 371 and 375
  - County Road 304 and Hwy 285
  - Ruby Mountain Recreation Site and Bald Mountain Road
  - Trout Creek Pass and Hwy 285
  - Mushroom Gulch and County Road 307
  - Shields Gulch and Hwy 285
  - McGee Gulch and Hwy 285
  - Chinaman's Gulch and County Road 301
  - Castle Rock Gulch and County Road 307
- Produce a map of the area showing the roads and trails authorized for use and designated as open. The map would also provide the public with the types of use allowed on a particular road or trail and provide additional information for the public's benefit.
- Mechanized travel (mountain bikes and other non-motorized, wheeled travel, game retrieval carts, strollers) will be restricted to designated roads and trails.
- Direct motor vehicle travel to a suitable parking site would be allowed within 100 feet of a designated road or trail if travel does not damage the land or streams.
- Pursue the acquisition of a "Public Easement" across private lands in Arnold Gulch and

300C road to provide access to the FSR 300 (Bald Mountain Gulch Road). Acquisition of an easement or right of way would be covered under a separate analysis. The following legal description applies to the easement that may be acquired from a willing seller: 6th Principle Meridian, T15S, R78W, Section 2 SE  $\frac{1}{4}$  SE  $\frac{1}{4}$ ; Section 1 SW  $\frac{1}{4}$ , SW  $\frac{1}{4}$ , and T15S, R77W, Sec. 12 NW  $\frac{1}{4}$  NW  $\frac{1}{4}$ .

## **E. No Action Alternative**

The No Action Alternative is used as a baseline to compare the proposed action and other alternatives for environmental impacts. In this analysis, the No Action Alternative describes the current, on-the-ground situation. This includes unauthorized user-created routes as well as authorized routes.

All forms of travel routes are accommodated under this alternative. The following types of travel could occur: passenger vehicle, 4x4 vehicle, ATV, motorcycle, horse, mountain bike, and foot.

The system would consist of approximately 253 miles of roads and trails. Of these 253 miles, about 28 Forest Service miles (21 miles of motorized and 7 miles of non-motorized) and 17 BLM miles (14 miles of motorized and about 3 mile of non-motorized) would be trails. The remainder of the mileage would be roads, and allow all forms of travel (169 miles on Forest Service and 38 on BLM).

To find out whether a particular road or trail is open or closed, motorized or non-motorized, refer to the No Action Alternative Map in the Map packet.

Pike and San Isabel National Forest, Cimarron and Comanche National Grasslands, Forest Order (Order No. 91-07) and the BLM RMP decisions allow direct motor vehicle travel to a suitable parking site within 300 feet of a road or trail if travel does not damage the land or streams.

The existing network of roads and trails are not in compliance (not all are authorized for use) with the Forest Plan or the RMP. It would continue to be illegal to operate motorized transportation off authorized routes.

## **F. Proposed Action**

This alternative is based on a citizen's group proposal (Citizens Proposal). Refer to Chapter 1, Public Involvement, for more information about this group and the process used to develop this alternative.

All forms of travel routes are accommodated under this alternative. The following types of travel could occur under this alternative: passenger vehicle, 4x4 vehicle, ATV, motorcycle, horse, mountain bike, and foot.

The system would consist of approximately 194 miles of roads and trails. Of these 194 miles, about 40 Forest Service miles (23 miles of motorized and 17 miles of non-motorized) and 21

BLM miles (4 miles of motorized and about 17 mile of non-motorized) would be trails. The remaining 133 miles would allow all forms of travel as roads (109 miles on Forest Service and 24 on BLM).

To find out whether a particular road or trail is open or closed, motorized or non-motorized, refer to the Proposed Action Alternative Map in the Map packet.

## **G. Alternative C**

This alternative has less motorized access into the Fourmile Area, fewer motorized recreational opportunities and experiences, and provides more benefits for overall health of the land and resources. This alternative is intended to provide the greatest reduction in soil loss due to vehicular travel, improve water quality, reduce wildlife habitat fragmentation, and protect riparian vegetation and heritage resources.

Under this alternative, only roads and trails authorized for use in the Forest Plan will be part of the travel system, with a few exceptions. Some of the roads and trails that are currently authorized, but are duplicate routes or have resource concerns would be closed or re-routed. On BLM managed lands, access is primarily provided by county roads. Other non-county roads that provide access to BLM public lands are managed as BLM system roads. Only a few of these system roads are present in the planning area.

Unlike the previous alternatives, this alternative would not have any single track, ATV trails, or some of the existing extreme jeeping opportunities. The following types of travel could occur under this alternative: passenger vehicle, 4x4 vehicle, ATV, motorcycle, horse, mountain bike, and foot.

The system would consist of approximately 142 miles of roads and trails. Of these 142 miles, about 19 Forest Service miles (2 miles of motorized and 17 miles of non-motorized) and 19 BLM miles, all non-motorized, would be trails. The remaining 104 miles would be open to all forms of travel as roads (88 miles on Forest Service and 16 on BLM).

To find out whether a particular road or trail is open or closed, motorized or non-motorized, refer to the Alternative C Map in the Map packet.

## **H. Mitigation Measures**

All actions will meet or move the area toward meeting the Forest Plan and RMP Standards and Guidelines, existing management direction (such as Best Management Practices, or BMPs), and laws, such as the Endangered Species Act.

In addition to following the existing laws, regulations, and directives, the following mitigation measures are designed to avoid, minimize, rectify, reduce, eliminate, and/or compensate for impacts of the alternatives being considered. The decision makers have the option to choose all, some, or none of the mitigation measures listed as part of the final decision.

The mitigations are numbered sequentially, regardless of which alternative they fit under.

## 1. Common to All Alternatives

1. Route closures and rehabilitation should include adequate, self-sustaining drainage, revegetation (with native plant species), and closure to discourage future use. Remove culverts and berms, if present. Check channel bottoms around culverts to ensure no headcutting occurs, and maintain natural grade. Banks around stream crossings should be recontoured and revegetated. In live streams, wildlife friendly erosion matting, or other stabilizing material may need to be used to reduce sedimentation, until vegetation is established.
2. Maintenance of System roads:
  - a) **Culverts** - Many system roads are adjacent to streams, and have the potential to contribute vast amounts of sediment to these streams. Inspect culverts for adequate drainage and proper function. Place energy dissipaters such as riprap below culvert outlet to trap sediment and reduce erosive energy, or relocate culverts to drain to a vegetated, low gradient area.
  - b) **Riparian vegetation** - Willow and other roadside vegetation function as a buffer to trap sediment before being introduced to the stream, and serves to stabilize banks, when roads are adjacent to the streams. Willows are often cut very low for sight distance and safety, but at times, they are cut too low and die, losing their function as bank stabilizers. It is recommended that roads are maintained in such a manner that the willows are allowed to provide their many functions and benefits.
  - c) **Road width/Ditch maintenance** - Some roads seem to be wider than standard width due to improper road maintenance practices. Future maintenance techniques should conform to the road specifications.
  - d) **Improved drainage** – Apply additional drainage to those roads prone to rutting. Water bars will be constructed to prevent excessive rilling and gullyng.
3. Increase public education about the need to avoid driving on roads during wet conditions.
4. Develop a road and trail maintenance plan, including planning for the appropriate equipment to match the route type.
5. In accordance with the National Historic Preservation Act (NHPA), Forest Service Manual (FSM) 2360, and BLM Manual 8100, all significant cultural resources will be protected from harmful effects. Specifically, for the Fourmile project, all identified significant resources will be avoided by treatment activity. For proposed construction, and road/trail closure and rehabilitation, significant resources will be flagged for avoidance by vehicles, heavy equipment, and all other ground disturbing activities deriving from project implementation. Given the use of avoidance, no additional mitigation will be required.
6. Cultural resource sites that have been found to be eligible to the National Register of Historical Places (NRHP) should be stabilized from current erosional forces and vehicle access routes to sites obliterated and barriers constructed if warranted. A preservation plan should be developed between the Forest Service and Bureau of Land Management cultural resource staff, project managers and the State Historical Preservation Office (SHPO).

7. Each eligible cultural site will be evaluated in light of the proposed treatment. This analysis will focus on whether the treatment has a beneficial or adverse effect. Adverse effects will be eliminated through avoidance; beneficial treatments will be tailored for each specific situation. Vehicle routes across sites will be closed, the closed tracks revegetated, and waterbars installed if necessary. In addition, treatments to stop current water erosion will be designed and implemented as needed. These might include seeding, waterbars, or other techniques. Standing structures will be signed to discourage use for camping and recreational users.
8. Inventory, treat, and monitor noxious weed infestations in the project area.
9. Ensure Wilderness and Wilderness Study Areas boundaries are properly signed.
10. To minimize affects to potentially occurring threatened, endangered, or sensitive plants and animals, site-specific road closure and restoration will be reviewed by a Botanist and Biologist to survey for plant species near closure and restoration sites.

## **2. No Action Alternative**

There is no specific mitigation for this alternative.

## **3. Proposed Action**

11. Close the following roads and trails (consisting of 11 miles). Please refer to the Proposed Action map for roads and trail locations. These mitigation measures are highlighted in red on the map.
  - a) 311DGR – due to the number of stream crossings and archaeological concerns.
  - b) 311 from 311B to 376, and 373 from 375A to 311 – this will eliminate a portion of the roads that form a “y” between 376C and 311B. Road density in this area is very high in the existing condition, and other roads lead to the same destinations.
  - c) 376B –will reduce road density for wildlife, agency maintenance cost, and assist in law enforcement.
  - d) 373BRC1 – will reduce agency maintenance cost, as extensive rerouting would be necessary to protect riparian and wildlife resources.
  - e) 376GR3B – will reduce route density.
  - f) 376GR7 – will reduce route density, provide for resource protection, limit roads in steep terrain, and protect riparian areas.
  - g) 308BGR, 308C1 –is located in a boggy area. This will limit resource damage, soil compaction, and erosion. Provide parking at the south and north ends for non-motorized access.
  - h) 185DGRD – one half mile of this road that is not part of the loop (from middle Cottonwood Creek North to proposed new trail (middle of Section 16, T 15S, R 77W).
  - i) 300 –from Ruby Mountain Campground to above second spring at the junction of the 300C road – approximately two miles, if a private easement can be achieved. This route goes through an extensive riparian area. This would eliminate several stream crossings. Refer to 12b for actions connected to this area.
  - j) 300GR1, 300GR6, 300GR11, and 185GR5 & 6 – they are in the roadless area, which

does not allow new roads to be designated, except for a few very specific reasons. These routes currently dead end into dispersed camping locations.

- k) 185EGR5 – will reduce road density in this area.
  - l) 375C – at above the old Fourmile homestead to intersection of 375RC2 to protect riparian, cultural values, and allow for additional interpretation of the site. Fence the Homestead site. Refer to 12a for actions connected to this site.
  - m) A portion of the routes in the Turtle Rock area west of County Road 375 (NW ¼ NW ¼ Sec. 32, T14S, R78W) to reduce road density. Refer to 12h for actions connected to this site.
  - n) All spurs off 375E GR5 to reduce road density.
  - o) 300GR4 – close approximately 100 yards in from the northeast end.
  - p) 185E – Close at most effective location between Columbine Gulch and private land.
12. Change the status of the following roads and trails:
- a) Reroute a motorized trail from the closed portion of 375C (see 11L) over to 375CGR3.
  - b) Keep open ATV trail (300C1) connecting 300C to 300. Refer to 11i for actions connected to this area.
  - c) Extend road 311D approximately 2/10th of a mile to allow for a more practical terminus and to provide for more dispersed camping.
  - d) Keep UR1-GR2 open as motorized single track.
  - e) UR1-GR1 – Change a portion from a road to single track.
  - f) Keep 376 UR2-GR1 open as a single track, and reroute to the east of 376GR6.
  - g) Change 376GR8 from a road to a motorized trail due to slopes.
  - h) Confine and designate routes to manage and control Turtle Rock roads west of County Road 375 (NW ¼ NW ¼ Sec. 32, T14S, R78W). Refer to 11m for actions connected to this site.
  - i) Keep 376GR3 open as a motorized trail and reroute around private land
  - j) Reroute 308A away from riparian area and designate dispersed camping sites.
  - k) Change the 311 road from the junction of 311 and 373 to the junction of 311A, to a motorized trail to reduce road density.
  - l) From the Midland Railroad Grade one-half mile north to the junction of 376A change from a road to a non-motorized trail.

#### **4. Proposed Action and Alternative C**

- 13. Install a bottomless arch culvert in the stream crossing of National Forest System Road 307 and Trout Creek in Section 10, T14S, R77W.
- 14. To limit use in stream channels and banks, place large rocks on braided areas, to make access less inviting, and rock and cable along banks.
- 15. Increase public education related to Wilderness Values. Properly sign and maintain non-motorized trails in the Wilderness and WSA.
- 16. Promote cooperative maintenance with counties and other agencies.
- 17. Where roadbeds intercept springs, an attempt would be made to reintroduce the water into the aquifer.
- 18. Relocate the Buffalo Peaks Wilderness trailhead/parking area approximately one half

mile south of its current location to improve driving safety.

19. Implement seasonal closures for resource protection such as when roads are susceptible to extensive rutting and during critical periods for elk, deer, and bighorn sheep.

## 5. Alternative C

20. Increased public education and law enforcement would be necessary to implement this alternative.

## I. Comparison of Alternatives

Also, refer to the complete tables and analysis in Chapter 3.

Table 1 – Comparison of Alternatives Summary

	<i>No Action</i>	<i>Proposed Action</i>	<i>Alternative C</i>
Soil Erosion (tons/year)	2464	2060	1066
Public Access (miles of road/trail)	253	194	142
Miles of Routes in Riparian Areas	29	24	21
Estimated Implementation Cost by Alternative (for route reconstruction, maintenance, and decommissioning)	\$79,483	\$524,152	\$411,831

## III. Affected Environment and Environmental Consequences

This section describes the resources of the area, and the potential effects the proposed action and its alternatives may have on these resources.

Direct and indirect effects tend to focus on the impacts of implementing proposed activities (or in the case of the No Action alternative, the impacts of not implementing the proposed actions). Cumulative effects discussions focus on the incremental impacts of the proposed activities when added to other past, present, and foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Other activities considered in cumulative effects analysis occur on lands of all ownerships near the Fourmile Area. These activities have been occurring for many years, are currently ongoing, and are expected to continue into the near future. These activities include logging, road building, road use and road maintenance, recreational activities, livestock grazing, prescribed burning, wildfires and wildfire suppression, and to a limited extent, mining and mineral exploration.

Some of the miles and/or acreages in this analysis vary by resource. This variation often depends on the criteria selected to run the analysis. For example, to determine cumulative impacts, or to better display the effects of roads on a resource, all roads, including private, state, and county, may have been included in a particular analysis. The total road miles in the alternatives only include Forest Service and Bureau of Land Management jurisdiction.

## **A. Background**

The off highway vehicle use of the Fourmile Travel Management area has been increasing. The increase has caused the opening of many non-system routes and has given the public an impression that the area is open to off road use. Recreational use in this area is expected to increase as people become more aware of the area. The current non-system routes are causing degradation to the soil, vegetation, and water resources that was not predicted or allowed under the current Forest Plan and BLM RMP direction. Many of the system roads and trails were not planned or engineered, but occurred from past needs of ranchers, recreationists, and other users. Overall, the current system roads need more frequent and intense maintenance. This includes improving drainage structures and signing of the system routes. The high number of non-system routes and lack of signing makes it difficult for the user to determine the system routes.

The area does not have an adequate authorized trail system to meet user demands. Recreational off-road use of the area may be compatible with existing resource conditions, however, resource and travel management direction does not accommodate the level of current or anticipated off-road use.

## **B. Affected Environment Common to All Alternatives**

The elevation of the Fourmile Area ranges from 13,326 feet, on West Buffalo Peak, to around 7,500 feet at the Arkansas River. The climate is semi arid to dry with an average of 9.8 inches of precipitation annually. The watershed is primarily Montane and Lower Montane. Montane is the area about mid-slope between mountain peaks and valley bottoms.

## **C. Physical Resources**

### **1. Hydrology**

#### **a) Affected Environment**

##### *(1) Watersheds*

The Fourmile Project affects three fifth level watersheds: Numbers Composite, Browns Creek Composite, and Antero Reservoir Composite. The Numbers and Browns Creek Composite

watersheds are tributary to the Arkansas River Basin. The Antero Reservoir Composite watershed is tributary to the South Platte River basin. These watersheds are listed below. Analysis is often done at the sixth level watershed, but because of the size of the project area, specialists working with watersheds agreed to look at the fifth level for cumulative effects.

Table 2 – Fifth Level Watersheds in the Project Area

Hydrologic Unit Code	Watershed Name	Watershed Acres	Acres in Fourmile Area	% of Project Area in Watershed
1102000103	Numbers Composite	151,227	26,521	18 %
1102000105	Browns Creek Composite	230,631	70,868	31 %
1019000101	Antero Reservoir Composite	257,327	3,208	1 %

In 1997 and 1999, the PSICC identified sixth level watersheds and major streams as being in Class I (pristine), Class II (limited), or Class III (degraded) condition, in the Inland West Watershed Initiative (IWWI). See glossary for the definition of classes. The following table identifies these watersheds in the project area.

Table 3 – Sixth Level Watershed and Conditions

5 <sup>th</sup> Level Watershed Number	5 <sup>th</sup> Level Watershed Name	6 <sup>th</sup> Level IWWI Watershed Number	6 <sup>th</sup> Level IWWI Watershed Name	IWWI Rating
1102000103	Numbers Composite	110200010314	Fourmile	Degraded
1102000105	Browns Creek Composite	110200010510	Nathrop	Degraded
		110200010506	Trout Creek	Limited
1019000101	Antero Reservoir Composite	101900010104	Salt Creek	Degraded
		101900010106	Agate Creek	Limited

The primary erosion processes are surface and channel erosion. Since European settlement, this area has been historically grazed by livestock and logged, leaving many areas in poor condition. Throughout the west, extensive land use changed vegetative cover and densities, changing watershed response to precipitation events. It is also theorized by some that this westward expansion and land use coincided with a slight climate change characterized by a drier climate

with intense precipitation events. In the Fourmile area, historic gullies can be seen from this period. Many of the gullies are vegetated, but as late as the 1970s a flood occurred in Trout Creek watershed, causing massive channel erosion and destroying property.

### *(2) Water Flows*

There are four perennial streams in the Fourmile area: Fourmile Creek, Sevenmile Creek, Castle Rock Gulch, and Trout Creek. All have relatively low base water flows.

Streams such as Columbine Creek and Cottonwood Creeks are intermittent. Many of the streams and tributaries are ephemeral, flowing in response to recent precipitation events or snowmelt. Most have flat channel bottoms, with sand or finer particles as substrate. Undisturbed channels tend to have vegetation in the bottoms, stabilizing the substrate. Disturbed areas do not have vegetation, and particles are available for transport downstream.

Springs are present in the Browns Creek Composite watershed, contributing to stream flow and wetlands. There is no data available on spring flows. Some of the springs may have been developed for livestock grazing.

### *(3) Stream Channels*

#### Numbers Composite Watershed

Stream channels in this watershed vary quite a bit. The upper reaches of Fourmile Creek are steep, stable, cobble stream channels. As the stream continues downstream, the gradient diminishes. The stream channels tend to become wider, shallower, and braided, which means that the stream divides into multiple stream channels. The substrate changes from coarse gravels and cobbles in the upper stream reaches to fine sand and silt in the lower sections. Beavers are prevalent in the management area, and many ponds are filled with sediment, particularly lower in the watershed.

Riparian areas consist of cottonwood, willow, brush, grasses, and forbs. Channel stability ratings are good to fair.

Lenhardy Cutoff Road (NFSR 376) is in the ephemeral channel of tributaries to Sevenmile and Fourmile Creeks. This disturbance in the stream channel removes stabilizing vegetation making channel substrate material more mobile and available for transport to perennial streams. In much of the area, vehicles have driven on and around the channel banks removing stabilizing vegetation, causing higher bank erosion that contributes to sediment loads.

#### Browns Creek Composite Watershed

Streams in this watershed are characterized as having low-gradient, meandering channel with broad floodplain. Riparian vegetation is predominantly willow, aspen, brush, grasses, and forbs. Beavers are active in this watershed, and many of these ponds are silted in. Channel stability ratings range from good to poor.

The drier drainage networks are predominately pinyon, juniper, rabbit brush, grasses, and forbs. Motorcycle tracks up the stream channel and through side gullies are common in this watershed. Roads 187 and 188 are adjacent to Castle Rock Gulch. Currently, they do not seem to be contributing sediment to Castle Rock Gulch because most culverts are plugged with sediment on Road 188. The original culverts in this road are poorly located, and if they were functional, would pour sediment directly into the stream. The road does have a high potential to contribute sediment to Castle Rock Gulch if these culverts were allowed to pass runoff.

#### Antero Reservoir Composite Watershed

Stream channels in this watershed vary greatly. The upper reaches are steep, stable, cobble stream channels. As the stream continues downstream, the gradients lessen. Stream channels tend to become wider, shallower, and braided. The substrate changes from coarse gravels and cobbles in the upper stream reaches to fine sand and silt in lower sections. Beavers are prevalent in the management area, and many ponds are filled with sediment, particularly lower in the watershed.

The overall stream health was identified as being extremely poor. Intense pressure from a variety of historic and current activities, such as dispersed camping, travel ways, and grazing impacts are contributing to this rating.

##### *(4) Floodplains*

Floodplains are associated with all streams. Existing floodplains have been modified by a variety of historic and current activities, including road and trail crossings, motorized “play areas”, dispersed camping, and livestock grazing.

##### *(5) Water Quality*

The waters of Colorado have been designated according to their beneficial uses for which they are presently suitable or intended to be suitable. The streams in the analysis area are classified as Aquatic Life Cold 1, Recreation 1a, Recreation 2, Water Supply and Agriculture.

These waters are also subject to the state antidegradation policy. This policy ensures that designated beneficial uses are maintained. Summaries and conclusions were made with the best available information and interpreted with professional judgment

#### Numbers Composite Watershed

The IWWI identifies Fourmile, Little Fourmile, and Sevenmile Creeks in the Numbers Composite Watershed as having excessive sediment and bank damage. The IWWI information is primarily anecdotal, with little supporting data. Summaries and conclusions were made with the best available information and interpreted with professional judgment.

Recent data collected in Fourmile Creek would affirm that there is excessive sediment in Fourmile Creek; however additional analysis would need to be conducted to determine whether

the sediment standard has been exceeded. Channel stability ratings for Sevenmile and North Fork Sevenmile Creeks were “fair”, and “good” for South Fork Sevenmile Creek.

#### Browns Creek Composite Watershed

The IWWI identifies Trout Creek from Castle Rock Gulch to the Arkansas River as having a chemical/metals problem. The Colorado Nonpoint Assessment Report of 1989 indicates higher levels of zinc, lead, and copper concentrations that are above basic standards for aquatic life. Recent discussions with the Colorado Water Quality Control Division indicate that they do not have any current data indicating Trout Creek is exceeding metals standards.

The IWWI also identifies many streams in this watershed as having bank damage and high sediment levels.

#### Antero Reservoir Composite River

The IWWI identifies high levels of sediment in many Antero Reservoir Composite streams. The IWWI information is primarily anecdotal with little supporting data. Summaries and conclusions were made with the best available information and interpreted with professional judgment.

Stream habitat inventory conducted in South Fork Salt Creek finds the stream to be in extremely poor health, with eroding banks and a large amount of fine particles in the substrate with little pool cover for aquatic life.

#### Desired Future Condition

Several of the watersheds in the Fourmile Area were identified as being in degraded or limited condition. Many of the streams were identified as having bank damage and excessive sediment. Desired future condition, for the watersheds in this analysis area, would be to improve the streambanks, reduce sediment levels in the watershed, and meet all applicable laws and regulations.

The BLM has developed several standards for public land health, which summarize desired future condition well.

1. Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment and provides forage, habitat, and biodiversity.
2. Water quality is improved or maintained. Stable soils store and release water slowly. The water quality of all water bodies, including ground water where applicable will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria and anti-degradation requirements set forth under State law as

found in (5 CCR 1002-8) as required by Section 303(c) the Clean Water Act.

## **b) Environmental Consequences**

### *(1) Effects common to all alternatives*

In general, there are few benefits roads and trails can provide to watersheds, and aquatic resources such as streams, floodplains, wetlands, or water quality, as compared to a watershed with no roads or trails. This project proposes three alternatives with various amounts of roads and trails, and analysis is more a case or degree of impact.

#### **(a) Direct Effects**

Direct effects of roads include increased runoff due to soil compaction, increased erosion and sediment production from road and ditch surfaces, as well as subsequent drainage, increased possibility of pollutants associated with motor vehicles entering water, and possible altering of surface and subsurface flows. Roads and trails located in the stream channel bottom remove stabilizing vegetation, making fine substrate available for mobilization downstream and increasing sediment loads.

Direct effects can also include impacts to riparian, wetlands, and floodplains at stream crossings, or if the travel way is located in the channel bottom, by increasing soil compaction, altering stream morphology, mobilizing substrate materials, and altering or removing stabilizing riparian vegetation. These can cause higher peak flows, which can make potential flooding worse downstream. All these effects can be addressed through hydrologic connectivity analysis of disturbed areas and road crossings.

Methods used to measure connectivity include stream channel proximity indicators. A hydrologically connected road can be defined as any road segment that has a continuous surface flowpath to a stream channel. Examples of flowpaths include ditches that drain water to stream crossings, and roads with fill slopes encroaching on stream channels. Direct effects analysis includes a table with the percent increase of stream network connected disturbed area by alternative.

Any disturbance to channel banks, particularly motorized activity up and down the stream banks causes bank erosion, removes vegetation, increases bank instability, reduces shade and cover for aquatic life, and changes the character of the floodplain, reducing its ability to function properly.

#### **(b) Indirect Effects**

Increased sediment and bank instability caused by roads and trails have indirect effects. Sediment is deposited further downstream, changing the channel morphology, and watershed response to flood waters. When too much sediment is added to a stream system, those channels that have moderate width/depth ratios, moderate sinuosity (the curvature of a streams channel), a variety of aquatic habitats, and carry flood flows and sediment. These channels become wide,

shallow channels that tend to have very little habitat for aquatic life, and often exceed temperature standards.

Colorado water quality standards would be placed at risk with any increase in sediment.

(c) Cumulative Effects

Changes in stream channels, sediment loads, bank stability, and loss of floodplain functionality, all have cumulative effects on overall watershed response in the watersheds and on receiving waters downstream. In this case, the downstream water is the Arkansas River. Increased sediment in the Arkansas River can affect aquatic habitat, diversions and intakes of other water users such as water providers and irrigators, channel morphology, flood flows, etc.

(2) *No Action*

(a) Direct Effects

The No Action Alternative leaves the most roads and trails open in the project area. The analysis indicates 184.6 miles of roads and 36.03 miles of trails would be hydrologically connected to the stream network, increasing connected disturbed areas to the total stream network by 25.4 percent. The Watershed Conservation Practices (WCP), recognized by the State of Colorado Nonpoint Source Program as Best Management Practices (BMPs) for protecting water quality, recommends an increase of not more than 10 percent and no increase in Class III or degraded watersheds.

This alternative maximizes the potential direct, indirect, and cumulative effects. Because of the 220 miles of roads and trails in the stream buffer, with no mitigation, increased erosion and sedimentation will occur. This decreases water quality, changes stream channel and floodplain function, decreases stream bank stability, increases downstream flood potential, and increases opportunity for pollutants to enter the stream channel.

(b) Indirect Effects

Indirect effects mentioned in “Effects common to all alternatives” would be maximized. The No Action Alternative would continue this trend, and user created roads, trails, “play areas”, and dispersed camping sites would likely increase. This alternative would continue the departure from Forest Plan direction, standards and guidelines, Standards for Public Land Health, and the desired future condition.

(c) Cumulative Effects

Effects common to all alternatives would be maximized.

(3) *Proposed Action Alternative*

(a) Direct Effects

The analysis indicates that 154.25 miles of road, and 19.63 miles of trails would be hydrologically connected to the stream network, increasing the connected disturbed area by 20% (5 percent less than the no action alternative).

The proposed road and trail closures would decrease the amount of connected disturbed area from the existing condition by approximately 4 percent. While still not meeting the WCP recommendation, it is a trend toward improvement.

Direct effects are those mentioned in the “Effects Common To All Alternatives” section, but because of the closing and rehabilitation of travel ways, the effects are lessened considerably. Implementing recommended mitigation measures found in Chapter II would further reduce direct undesirable effects.

(b) Indirect Effects

Indirect effects would be the same as those identified in the “Effects Common To All Alternatives” but would be less than the No Action Alternative.

(c) Cumulative Effects

Cumulative effects would be the same as those identified in the “Effects Common To All Alternatives” but would be less than the No Action Alternative.

*(4) Alternative C*

(a) Direct Effects

This alternative would reduce the hydrologic connectivity by 81.7 miles, or 37 percent. Connected disturbed area from existing conditions would be reduced by 7.4 percent, and although it isn’t meeting the 10% recommended by the WCP, it is certainly a trend toward improvement.

Again, direct effects are those mentioned in the “Effects common to all alternatives” section, but because of the closing and rehabilitation of travel ways, the effects are lessened considerably. Implementing recommended mitigation measures found in Chapter II would further reduce direct undesirable effects.

Closing or rehabilitation of roads and trails would cause a short-term increase in erosion; however, long-term erosion would decrease due to the reduction in the transportation system.

(b) Indirect Effects

Indirect effects would be the same as those identified in the “Effects common to all alternatives”, but to a lesser degree than in the No action alternative and the Proposed Action.

### (c) Cumulative Effects

Cumulative effects would be the same as those identified in the “Effects common to all alternatives” but to a lesser degree than the no action alternative and the Proposed Action.

### (5) *Comparison of Alternatives*

Table 4 – Comparison of Alternatives for Hydrology

Comparison of Alternatives	No Action	Proposed Action	Alternative C
Percent Increase of Stream Network Connected Disturbed Area	25.4 %	20.4 %	18.0 %

## 2. Soils

### a) **Affected Environment**

Most of the area is comprised of shallow soils weathered from granitic rocks in a semi-arid environment. These soils are low in nutrients, water holding capacity, and organic matter content. Vegetation is readily destroyed and slow to recover once it has been disturbed by the recreational activities commonplace to the Fourmile area. With the vegetative cover removed, soil erosion and sediment deposition are greatly accelerated reducing overall site productivity, water quality, and riparian health. Approximately 17% of the project area is on slopes greater than 30%. These steep areas are where potential losses to erosion are highest.

In addition to losses in soil productivity caused by soil erosion, recreational activity also affects soil compaction. Excessive soil compaction creates long-term negative impacts to soils and watersheds. All traffic, motorized and non-motorized alike, applies pressure to the soil surface. This ground pressure compacts soil particles and reduces pore space in the soil. Effects of compaction worsen with increased traffic. Soil compaction is detrimental to plant growth by reducing infiltration and water holding capacity, and impeding root growth. Soil compaction is most acute when soil is wet (soil moisture content greater than 20%). Soils low in organic matter, like those typical of the Fourmile Area, is more susceptible to soil compaction. Coarser textured soils are less likely to exhibit compaction problems than soils of finer textures. Although the project area is predominantly comprised of coarser sandy loams, soils in bottomlands within the project area are finer textured and more vulnerable to soil compaction.

Travel routes that are poorly located or improperly maintained can greatly amplify the affects of erosion and sediment transport. Compacted and unvegetated surfaces on roads and trails increase and concentrate surface runoff. If this runoff is not effectively dealt with through proper travel route design, it can quickly and easily produce gullies. Such gullies become a major sediment source. Gullies can form naturally, but are often aggravated or initiated by upland land uses, roads that increase or concentrate surface runoff, or from direct physical disturbance to stream

channels or adjacent riparian zones. Channels in this condition increase peak flood flows and drain alluvial aquifers, often reducing the quality and extent of riparian zones.

#### Desired Future Condition

The off highway vehicle use is occurring only on designated and maintained system roads and trails. The multiple uses of the area are not degrading water quality or riparian habitat. The soil erosion losses do not exceed threshold limits, i.e., the productive soil surface is not lost faster than it can be replaced over time (Forest Plan, p. III-72). Both agencies have similar travel management policies for the area.

#### Key Issues

This section contains information related to the following issues identified in Chapter 1 of this EA:

- Loss of soil
- Movement of soil down slope and/or down stream
- Loss of vegetation
- Increased erosion and compaction
- Reduced soil productivity

#### Forest Plan Management Direction

**Goal:** Manage the soil resource to maintain long-term productivity

**Objective:** Management activities on forest lands will not substantially impair the long-term productivity of the soil or produce unacceptable levels of sedimentation resulting from soil erosion.

**Standards:** Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to more than 15% of any land unit. The 15% limit applies to all natural and human disturbances that may impact soil structure, organic matter, and nutrients.

#### **b) Environmental Consequences**

##### *(1) Effects Common to all Alternatives*

#### Wet Soils

The Trout Creek Watershed Soil Survey (1961) information identifies wet or organic soils in portions of the Fourmile area. In wet areas, soil compaction from vehicles is more likely to occur and plants may be unable to germinate. Loss of vegetation could result in these sites drying up.

When cross-country, off-route motorized traffic occurs over a large area, so does the associated

environmental effects, with most impacts taking place in wet soil conditions. If the disturbance is not repeated, natural regeneration could occur in areas with productive soils. However, areas containing less productive soils will show signs of disturbances for years.

In the area, cross-country motorized routes and other routes have dissected and reduced riparian and wetland areas. These routes have drained away surface water or altered subterranean flows. Consequently, some wet meadows have lost their ability to retain water and now are dry.

People are naturally drawn to water and riparian areas. Cross-country, off-route travel paths crossing streams and wetlands would continue to result in the loss of vegetation and increased soil compaction, bank instability, and increased sedimentation. Stream banks that receive heavy motorized use could become compacted and rutted, and increased sediment could enter the water. Increased sediment could negatively impact fisheries by reducing available oxygen and potentially covering spawning gravel.

### Road Construction and Reconstruction

Research has shown that seventy percent of total sedimentation from slopes occurs the first year after road construction. New roads or temporary roads will effect the annual sediment deposition at a rate between 10 to 15 cubic meters per hectare of road area, and of that, less than 10% of eroded material will be supplied to channels.

Cross drains are by far the largest source of sediment from roads; in part, because sediment is carried the furthest. Increased runoff causes greater erosion of road prisms and provides greater energy for sediment transport below slopes (Ketcheson and other 1996). Erosion rates, after the initial spring runoff season, vary by site conditions such as ground cover density, slope, gradient, aspect, rainfall erosion on cut and fill slopes (Megahan and others 1991), gradient (Vincent 1979), effects of grade, traffic induced rutting, and type of surfacing on road treads (Burroughs and King 1985).

Reconstruction of existing roads, including rock crossings in riparian areas, will reduce sediment delivery, especially from poorly drained roads or those roads in poor condition. Implementation of Best Management Practices (BMPs) will effectively minimize most erosion on newly constructed and reconstructed roads.

### Erosion Processes

Several erosion processes actively occur in the area. They are sheet erosion, rill erosion, and gullyng. Each plays a part in sediment delivery to streams and loss of productive soil.

Sheet and rill erosion appears to be prevalent in the shallow sandy soils with little vegetation on the uplands. There are small drainages and valley bottoms containing alluvial material very susceptible to surface disturbance. Gullyng is apparent on cut and fill slopes of system roads lacking proper maintenance and along user-created routes lacking proper drainage features.

Soil erosion due to off road use will occur on easily compacted or erodible soils. In areas for proposed travel routes, it is anticipated routes will accumulate surface runoff and channel water, thereby accentuating rilling and increasing the potential for sediment delivery to streams.

Table 5 -Comparison of Potential Erosion Hazards\* by Watershed Acres

5th Level	Slight		Moderate		Severe	
	Acres	Percent of Watershed+	Acres	Percent of Watershed+	Acres	Percent of Watershed+
Antero Reservoir Composite	2803	87	153	5	277	9
Browns Creek Composite	33731	48	27324	39	9814	14
Numbers Composite	10691	40	11483	43	4347	16

+ Refers to the percent of watershed in the project area.

\*The rating assumes that the surface cover of vegetation or leaf litter has been disturbed or destroyed and that bare surface soils are exposed to the elements of erosion. A rating of *slight* means that the soil has a mixture of sand, silt, and clay and has relatively high organic matter content, creating strong structure. These soils generally are on gentle to moderate slopes and do not usually require costly erosion control measures. A rating of *moderate* means soils have moderate inherent erodibility and are generally on moderate to steep slopes. These soils are more easily dispersed by raindrop impact and may require more expense to control erosion and sedimentation. An onsite investigation may be needed by soil and water personnel for any planned projects on such areas. A rating of *severe* indicates soils with moderate to high inherent erodibility and is usually on moderate to very steep slopes. Soil particles are readily moved by overland flow after disturbance. These soils may require considerable expense to control erosion and sedimentation as a part of management practices, when activities are planned for such areas. An onsite investigation by soil and water personnel is highly recommended. Source: *Soil and Ecological Land Unit Survey, Northern San Isabel and Western Pike National Forests, Colorado*.

#### (a) Cumulative Effects

##### Fire

Typically the range of fire effects on soils is dependent on soil moisture, fuel conditions, and weather as they contribute to fire intensity and severity. Soil nutrients not volatilized by fire are released as highly mobile ions which can be metabolized rapidly either by plants or microorganisms (McNabb and Swanson 1990).

Fire increases accelerated erosion potential primarily through its effects on vegetation and soil. As fire increases in severity, more vegetation is killed, more forest floor organic matter is consumed, and the likelihood of changing the physical properties of the soil is increased. Duff consumption will provide the maximum mineral seedbed, while partial consumption or charring will limit the exposure of the mineral seedbed. Negative impacts may occur from slash concentrations where fire intensity is greater and localized. Very hot burns (where rocks are fractured) can leave deep ash layers and prevent seeds from reaching the mineral soil bed. Surface moisture and nutrients may be depleted enough to prevent regeneration and establishment of vegetation.

There are proposed prescribed burns located south of Highway 285 in the project area. These burns may take place in the next 1 to 5 years. Depending on the planned and actual intensity of the burns, these may affect soils as described above.

The No Action Alternative would allow these impacts to be above the present sediment rates. The Proposed Action and Alternative C would potentially lower sediment rates (see Alternative Comparison table in Chapter 2). This may lessen the short or long term impacts of prescribed and wildfires, especially in highly erodible soil areas. Additive impacts could be minimized by not either allowing road reconstruction, construction or restoration activities or prescribed fires to occur in the same area until the short or long term impacts of the first activity have past.

## *(2) No Action Alternative*

### *(a) Direct Effects*

Increased soil erosion, compaction, and displacement would be anticipated as user created unclassified roads continue to proliferate. The loss of vegetative cover and productivity due to uncontrolled use would increase. Implementation of this alternative would have a direct negative effect on soil resources. Refer to Table 6 for alternative comparison.

### *(b) Indirect Effects*

This alternative may allow for increases in user created routes. This will increase soil erosion and runoff.

### *(c) Cumulative Effects*

This alternative would reinforce activities that have occurred in the past. If the current trend holds, erosion levels exceeding Forest Plan Standard along with the BLM Public Land Health Standards would continue.

## *(3) Proposed Action*

### *(a) Direct Effects*

Soil erosion will result from road construction, road reconstruction, and motorized and non-motorized use. However, it will be minimal and well within Forest Plan and RMP standards due to Best Management Practices and other mitigation measures (summarized below in the recommendations to meet desired future condition). Refer to Table 6 for the comparison of action alternatives for the soil resource.

(b) Indirect Effects

User created routes may be less likely in this alternative to increase soil erosion and runoff.

(c) Cumulative Effects

In the near future, recreation on National Forest System Lands will likely continue to increase. However, in the project area, most recreation opportunities will be confined to areas that have already been affected by past recreation activities. This is because currently undeveloped areas are steep, and/or rocky, thus making future recreation entries economically marginal or unsuitable. Therefore, further recreation under the Proposed Action and Alternative C will have little cumulative effect on the Browns Creek Composite, Numbers Composite, and Antero Reservoir Complex areas, because future road building in these areas appears to be unlikely. The characteristics of these areas that exist today are likely to persist well into the future, regardless of recreation in the peripheral areas.

*(4) Alternative C*

(a) Direct Effects

The effects, under this alternative would be similar to the Proposed Action. Since there are fewer roads and trails, the effects will be the least of all alternatives.

(b) Indirect Effects

User created routes may be less likely in this alternative to increase soil erosion and runoff.

(c) Cumulative Effects

These would be similar to effects of the Proposed Action.

*(5) Comparison of Alternatives*

Under the No Action Alternative, new erosion would occur, and would have the highest impact among the alternatives, because it has more systems roads and adds more roads to the overall transportation network.

The Proposed Action would have the second highest impact among the action alternatives. Alternative C would have the lowest impact to the soil resource among the action alternatives,

primarily due to the least road miles and no reconstruction of roads.

Closing or rehabilitation of roads and trails would cause a short-term increase in erosion; however, long-term erosion would decrease due to the reduction in the transportation system.

Table 6 –Comparison of Sediment Load by Alternatives (Sediment in US Tons/year)

	No Action	Proposed Action	Alternative C
<b>Browns Creek Composite</b>	1841	1538	636
<b>Numbers Composite</b>	563	475	404
<b>Antero Reservoir Composite</b>	60	47	26

### 3. Floodplains, Wetlands and Riparian Areas

#### a) Affected Environment

This planning area includes major wetland resources that are tributary to the Arkansas River: Fourmile Creek, Sevenmile Creek, Trout Creek, and a composite of streams that are tributary to the Arkansas River. There are additional tributaries to the South Platte River.

#### Historical Overview

Considerable evidence (Trout Creek restoration files, etc.) shows turn of the century grazing practices damaged the planning area basins. These poor grazing practices impacted two key variables of stream stability: 1) the rate and magnitude of overland storm runoff resulting in excess water delivery to stream channels, and 2) excessive removal of stream side vegetation reducing the streams ability to pass flood flows without channel damage.

Travel routes up and adjacent to watercourses followed the grazing period for timber cutting and settlement. Many of the historic travel routes intercepted overland flow and further accelerated water delivery. By the early 1900s, many channels were destabilized and expressed down cut morphology resulting in excessive sediment loads because a destabilized channel needs to change to reach a channel shape to match the changed hydrologic conditions. Aggressive rehabilitation practices followed this period and included road maintenance, check dams, and managed grazing. This improved condition in much of the area but many riparian resources are still recovering.

Before major human disturbance, riparian/wetland vegetation was likely at its full extent with the main disturbance being natural weather cycles. Ephemeral drainages, characterized by predominantly upland grasses and shrubs in the channel with pockets of wetland vegetation where ground water is close to or at the surface, likely had less disturbed upland vegetation in drier sections and more pockets of riparian vegetation. These channels would have been more stable, had a higher water table, more surface water, and fewer major sediment pulses from

precipitation events. Perennial streams likely had continuous bands of vegetation consisting of various communities made up of a combination of cottonwoods, river birch, willows, thin leaf alder, rushes, sedges, mesic grasses, wetland forbs and aspen, varying with elevation and local site conditions.

### Existing Conditions

The expanding road/trail network being evaluated mimics the original change to the area where additional routes are intercepting overland flow and delivering runoff water and sediment in a manner out of balance with the current channel capability. This resulted in sediment delivered to waterways from both destabilized banks, and from washed out travel routes. If not maintained to shed water, routes become channels, down cutting and delivering additional sediment down slope.

The current area trend is that more and more vegetation is being converted to disturbed surface. Disturbance of riparian vegetation, increased run off, excessive sediment, and destabilized channels are influencing floodplain, wetland, and riparian resources at both on site and downstream locations.

In the planning area there are also numerous dry sandy channels that have intermittent flows from thunderstorms or early spring snow melt but support little or no wetland vegetation. These often wide, sandy channels have historically been used as roads but use is expanding both in length and width of the channel used. Travel ways are expanding to include the banks and side draws, which drain into the channel at high flow. A high amount of vegetation has been removed.

Discussion of these channels is covered in the soils and hydrology sections of this EA. Others channels have seeps/springs, with surface or subsurface flow of some length. These support either a combination of surface flow and riparian vegetation or just riparian vegetation.

### Desired Future Condition for Floodplain, Wetlands and Riparian Areas

To meet standards set by the BLM and Forest Service, the health of riparian, wetland, and floodplain resources must improve by reversing impacts from the negative trend of route proliferation and poor route maintenance.

For this planning area, it would be desirable to prevent the impacts of storm water hydrology from interacting with roads and affecting waterways. To the extent possible, direct impacts to streams, riparian areas and tributary channels caused by routes and trails should be reduced through a decrease in the number of channel crossings and miles of routes in or near drainages, and improved route maintenance. The trend in increased route proliferation must be corrected.

Direct and indirect disturbance of wetland vegetation should be reduced so these areas can function properly to provide benefits brought about by healthy watersheds. Reducing sediment loads would benefit aquatic wildlife as well.

## Key Issues

The objectives set in the Forest Plan and RMP are not being reached in many areas. For example, sediment load trends are moving away from Forest Plan and RMP standards.

### **b) Environmental Consequences**

The extensive road network being evaluated in this EA is a demonstrated stream impact. Table 7 summarizes by category: routes in riparian areas, routes in riparian areas that are fisheries, and routes located within approximately 100 feet of riparian areas, and quantifies wetland resources and routes by alternative.

Information used for mapping and evaluation was derived from numerous sources as listed: Colorado Division of Wildlife stream surveys, BLM and Forest Service evaluation of Functioning Condition as outlined in BLM Tech-Reference 1737-9 (1993), Forest Service Inland West Watershed Initiative, and information provided by the Colorado Natural Heritage Program. Applying principals from Forest Service/BLM road/water interaction publications gained further determination of condition and trends. Forest Service roads analysis procedures were used as well as personal knowledge of resource condition. Numeric values were derived through GIS analysis of maps and databases created for project analysis and established agency GIS resource themes.

Generally, fewer roads in a watershed are beneficial to moving or maintaining a watershed to maximize healthy watershed benefits e.g., clean water etc. This logic would favor Alternative C over the other alternatives. However, the route selection criteria used to make recommendations for retaining certain routes into the travel system was stringent enough to somewhat level the impact severity of Proposed Action Alternative. Because there is a high social dependency on many of the routes, those that remain that have impacts need to be further mitigated to minimize resource damage.

Table 7 – Miles of Routes With Direct Impacts to Riparian Vegetation in The Fourmile Planning Area for Each Alternative and Percent Change from The No Action Alternative\*.

Watershed	Acres of Riparian**	Miles of Routes by Alternative and (% change from no action)			Route Stream Crossings*** and (% change from no action)		
		No Action	Proposed Action	Alternative C	No Action	Proposed Action	Alternative C
Numbers Composite	1195	-	-	-	91 (0%)	66 (-27%)	60 (-34%)
Browns Composite	3119	-	-	-	595 (0%)	431 (-28%)	341 (-43%)
Total	4314	321 (0%)	245 (-24%)	189 (-4 %)	686 (0%)	497 (-28%)	401 (-42%)

Watershed	Miles of Routes Within 100 ft. of Riparian and (% change from no action)			Miles of Routes Within Riparian and (% changes from no action)			Miles of Routes Within Riparian with Fish in Stream and (% change from no action)		
	No Action	Proposed Action	Alternative C	No Action	Proposed Action	Alternative C	No Action	Proposed Action	Alternative C
Numbers Composite	15.59 (0%)	13.42 (-14%)	11.19 (-22%)	5.47 (0%)	4.47 (-18%)	4.24 (-22%)	1.39 (0%)	1.28 (-8%)	1.18 (-15%)
Browns Composite	72.58 (0%)	62.40 (-14%)	55.25 (-24%)	23.62 (0%)	19.26 (-19%)	16.82 (-29%)	6.13 (0%)	5.81 (-5%)	5.28 (-14%)
Total	88.17 (0%)	75.82 (-14%)	66.44 (-25%)	29.09 (0%)	23.63 (-19%)	21.06 (-28%)	7.52 (0%)	7.09 (-6%)	6.46 (-14%)

\* Values presented derived from analysis done with Arcview 3.2 using CDOW/BLM/USFS riparian coverage for Chaffee County. Does not include the railroad along the Arkansas River.

\*\* Includes riparian vegetation associated with irrigation ditches and irrigated fields south of Buena Vista and vegetation along the Arkansas River, approximately 1500 acres. Riparian acres per unit area on public lands are less. Antero Reservoir composition was not analyzed because it makes up a very small component of the project area. Blanks are because of no watershed breakdown of information.

\*\*\*Does not include highways or agency closed routes

### (1) Effects common to all alternatives

Slope, soil, surrounding vegetation, distance to wetlands, and channel type are prominent variables that determine direct, indirect, and cumulative impacts to riparian resources. As discussed earlier, current floodplain resource condition in much of the planning area is degraded. Equally important to current condition is the fact that the trend for un-managed growth of the route network is towards further degradation. Predicted maintenance funding to manage the existing system will not reverse the trend. There are a variety of indicators used to determine road problem severity.

Some of the Citizen's Team were trained on evaluation indicators and criteria to assist in making decisions on route suitability. Affects due to impervious surfaces, water diversions, water interception, areas of increased water energies, duplicate routes, disturbed vegetation, compacted soils, head cutting, erosion signs, and indicators of deposition are examples of criteria evaluated to determine road suitability. Much of this information was used by the Citizens to develop their alternative and generally many problematic routes are recommended for closure. In addition, Forest Service Roads analysis criteria were used.

Table 7 serves as a surrogate for road problem indicators related to road/water interaction, (i.e., miles of road in or adjacent to drainages) and shows there are a high number of routes along waterways. The No Action Alternative would allow continued use of all existing routes and proliferation of new routes. Under this alternative, resources would continue to degrade. The Proposed Action and Alternative C both make substantial reductions in the amount of route/riparian interaction. Table 7 does not illustrate specific problematic routes but shows overall reductions if either alternative is accepted by illustrating the percentage change from the current situation.

### (2) *Cumulative Effects*

Cumulative affects analysis for any alternative is difficult, and likely unobtainable, because variables with high likelihood of change such as public use patterns, neighboring private land development, catastrophic fire, and precipitation events all place extreme variability into resource impacts at a cumulative scale from a roads and trail system developed through the Decision Record. However, singling out only trend in route proliferation, whereby sediment is the measurable variable cumulatively added to the larger Arkansas River watershed, then the Proposed Action Alternative and Alternative C move towards improving resource condition (assuming static conditions with any of the change variables) and thereby reducing the cumulative sediment load coming out of the planning area watershed. With time and BMPs, route impacts can be minimized or hydrologically disconnected from the basins, greatly reducing the cumulative impact. Conversely, the No Action Alternative has a continued cumulative negative affect on the Arkansas watershed, and likely the dependent biota.

Some riparian areas may be impacted by other activities, such as livestock grazing and dispersed camping, more than by the roads. As these other activities are analyzed, changes to management strategies can benefit riparian condition and water quality.

### *(3) Comparison of Alternatives*

The impacts to riparian areas will be the least in Alternative C and the most in the No Action Alternative. The Proposed Action and Alternative C will move the area toward meeting the Forest Plan and RMP standards.

## **4. Cultural Resources**

### **a) Affected Environment**

The cultural resources located in the Fourmile Travel Management Area constitute a unique and important record of human habitation of the central Colorado mountains and valleys. The significance of individual sites is a function of their relationships to important events, peoples or styles and their ability to provide additional scientific information about the prehistory or history of the area. As of November 1, 2001, the Forest Service has conducted one continuing and 16 prior cultural resource inventories in the Fourmile vicinity and has identified 107 cultural properties. Thirty-two of these sites are historic sites and 75 are prehistoric sites. The BLM has conducted one current and 34 previous inventories resulting in the identification of 50 cultural properties. Of these, thirty-eight are prehistoric sites and 12 are historic sites.

The 44-recorded historic properties are related to mining, logging, and transportation. The mining related sites are associated with the Colorado High Country Mining Boom of the late 19<sup>th</sup> and early 20<sup>th</sup> century and local flurries of activity based on the discoveries of promising ore deposits. These local boomlets were quite limited in a geographic sense; as one area “hit it rich”, there would be a short period of expansion and frenzied activity followed by a contraction as the lode played out and another strike was made somewhere else.

Mining sites in the Fourmile vicinity are expressed as prospect complexes, mines and mining complexes, miner’s cabins, and access roads. Internally, the mining related sites contain cabins foundations, refuse areas, prospect explorations, adits, placer mining ditches, and mine shafts. Historic logging related sites are also associated with the Colorado Mining Boom. Wood was needed to construct cabins, mines, railroad tracks, furniture, and other domestic items needed by the miners and settlers. These sites are expressed as tree-cutting areas, logging roads, sawmills, refuse areas and logging camps. Most of the logging resources date from the late 19th to the early 20th century, circa A.D. 1880-1930.

Transportation related sites are also associated with the Colorado Mining Boom. Wagon roads and railroads were needed to transport settlers and supplies to the mining districts and to bring the ore out. One important transportation resource discovered during a previous investigation is the Midland Railroad, now expressed as the abandoned grade and related phenomena such as cuts and fills, sidings, and former depot locations. The Midland Railroad is an outstanding resource in the context of the development of rail transportation from Colorado Springs to the Central Mountains of Colorado. This cultural property is an example of the pioneering spirit of Colorado and the west.

The grade of the Midland Railroad and associated sites related to railroad operations are cultural properties eligible to the National Register of Historic Places. The railroad sites are historically significant through their association with historic events (the Mining Boom) and because of their intrinsic engineering and archaeological values. Only the grade itself is recorded in the Fourmile project area. Two historic mining related properties within the Fourmile study area are also eligible to the Register. These sites may contain intact archaeological material that could add new information about mining during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries.

The 113-recorded prehistoric properties are generally characterized as surface areas of stone tools, and stone tool manufacturing debris. Concentrations of finished tools and manufacturing debris were noted at some of the sites that may represent the remnants of temporary dwellings, or outside activity areas.

Total quantities of material items on the surfaces of these properties range from four or five to several thousand; one prehistoric quarry site contains more than one thousand surface items. Prehistoric sites with relatively few surface items and with no recognizable materials concentrations are usually interpreted as resource processing and procurement areas; sites with relatively many surface items (30 or more) and material concentrations are thought to be seasonal camps. Thus, most of the prehistoric properties recorded in the area probably represent locations where small prehistoric social groups resided for a short period while harvesting local resources; or, some of the smaller sites may be areas where collected resources were processed or consumed.

Based on assemblage variation and deposition, the majority of sites identified in the Fourmile project area date from the Middle Ceramic Period to the Historic Contact Period (A.D. 1000-1870); the area probably was inhabited during earlier periods, but the evidence for such use has been obscured or destroyed by later human use and geological forces.

At some of the prehistoric properties, the cultural phenomena included scarred trees. The economic practices of the Protohistoric and Historic Contact Periods (AD 1725-1880) groups included the harvesting of the inner bark of the ponderosa pine; the bark may have had several uses including consumption as a food staple or use in medicines. Although not unique, this element adds to the rich history of the area.

Fifteen prehistoric properties identified in the Fourmile project area are eligible to the National Register of Historic Places. Thirteen of these sites are open campsites with substantial quantities of surface material and the probability of extensive subsurface deposits. The other two are large stone raw material quarries containing thousands of surface items. This quarry was an excellent source of raw material for the manufacture of dart points and other edged stone tools and was frequented by American Indian peoples living in the Fourmile area.

These properties contain preserved archaeological deposits that are storehouses of archaeological and cultural information. The information can be applied in studies of research problems in Colorado Mountain archaeology, for example, calculating the time span of prehistoric occupation in the southern Rocky Mountains, or reconstructing the subsistence patterns and other life ways of indigenous social groups. Some of the sites may be important to the modern descendants of

American Indian peoples who previously inhabited the area.

#### Desired Future Condition

Cultural (archaeological and historical) resources are irreplaceable and nonrenewable. All recorded cultural properties are evaluated for significance and listing on the National Register of Historic Places (NRHP). Sites determined eligible are avoided by all project activities that might have the potential to affect the property in an adverse sense. In the event that this is not possible, mitigating treatments for eligible sites are developed on a case-by-case basis as warranted and implemented as needed. The Forest Heritage Program Manager in consultation with unit managers, the Colorado Office of Archaeology and Historic Preservation and the Advisory Council on Historic Preservation are responsible for decisions about significance and protection.

Access to sites for the education of the public shall be considered on a case-by-case basis in keeping with the National Historic Preservation Act and derivative Forest Service and BLM policy direction, unit managers insure such sites are appropriately protected against theft, vandalism, or loss.

Significant archaeological sites are preserved for scientific investigation or appropriate public use. Cultural resources are part of the recreation opportunities spectrum and are available for visitors, with appropriate safeguards.

1. Erosion of archaeological deposits at significant sites is minimal and controlled when discovered.
2. Agency improvements and projects are designed so that they do not affect important resources.
3. Partnerships with universities and other scientific institutions are encouraged to investigate the archaeology on public lands.
4. Historic mining and town sites are protected from impacts and are available for visitors.
5. Prehistoric sites are available for visitors and for scientific study with appropriate protective safeguards. Vulnerable sites in terms of possible pilferage or traditional values to Native American groups are protected and not available for visitors.
6. A record of the mining era and important mountain homestead sites are preserved and protected from erosion and impacts.

#### Key Issue/Forest Plan Standards

The key issue is to protect and preserve cultural properties during the implementation of the treatments stipulated in the line officer's Decision Notice. Direct impacts to cultural resources can result from the actions of road construction and closure and off road driving. These activities can negatively affect a site through the mixing or disturbing of archaeological soils. Vehicles and personnel can trample artifacts causing them to break or be altered. Vehicle tires can wear away archaeological soils or do worse damage in wet conditions. Vehicles and visitors can damage or destroy standing historic structures. Road and trail closing activities, for example, scarification, can also damage or destroy archaeological deposits. Indirect effects, primarily water erosion, are potentially just as damaging to archaeological sites as direct forces.

The Forest Plan and BLM Management Guidance for cultural resource protection is to comply with the National Historic Preservation Act of 1966 as amended (NHPA). The Pike and San Isabel National Forests General Directions for management are to (1) protect, find an adaptive use for, or interpret all cultural resources on National Forest System lands; (2) nominate or recommend eligible cultural properties to the National Register; and (3), protect and foster public use and enjoyment of cultural resources. The last guideline regarding protection is accomplished through the avoidance of known cultural resources until they are evaluated and determined significant or not significant. If a site is determined eligible, it is identified to project managers and a protection strategy is developed; in cases of unavoidable impacts, all scientific information must be collected and recorded.

## **b) Environmental Consequences**

### *(1) No Action Alternative*

#### **(a) Direct Effects**

If the No Action Alternative is implemented, no treatments are proposed. Implementation of this alternative would have direct harmful effects on cultural resources. The current situation is active use of the area by all terrain vehicles (ATV), four-wheel drive vehicles, and motorcycles; the use is not confined to system roads and trails; rather, it has created a network of non-system and informal four-wheel drive roads and motorcycle trails. The direct impact to sites from these uses result from vehicular traffic across archaeological sites. The impacts include damage, breakage, and movement of surface artifacts. In addition, dry archaeological soils are accretionally worn away by vehicle tires, and during wet periods, the soils are rutted and displaced. Hence, the direct effects are loss of archaeological materials and deposits, and the information they contain. Standing structures will continue to be used as recreation camps and their wooden components used as firewood. Therefore, implementation of the No Action Alternative will result in the loss of archaeological information and the ultimate destruction of historic structures.

#### **(b) Indirect Effects**

The indirect effect of implementation of the No Action Alternative is the continued loss of archaeological deposits and their materials. Vehicle actions increase the vulnerability of soils on or near archaeological sites to erosion, particularly water channeling. Further, erosion and runoff could damage standing historic structures.

#### **(c) Cumulative Effects**

There should be no cumulative effects resulting from implementation of the No Action Alternative and other potential public land management actions in the near future. Presumably, potential future actions will trigger NHPA mandated studies that contain assessments of effects on cultural resources and recommendations for mitigation of harmful effects. Other cumulative effects might include increased water erosion if treatments to prevent and curtail such erosion are

not designed and implemented.

## *(2) Proposed Action Alternative*

### *(a) Direct Effects*

If this alternative is implemented, there is a direct positive effect to archaeological sites. Following the NHPA and the standards of the Forest Plan and RMP, archaeological sites considered significant will be avoided resulting in no detrimental direct effect. Further, the implementation of this alternative would preserve and protect cultural resources by limiting the access of recreational vehicles to site locations, thereby reducing ground disturbance, and loss or destruction of archaeological soils

### *(b) Indirect Effects*

The indirect effect of project implementation would be the reduction in erosion and soil loss on and around archaeological sites. The curtailment of current water and wind erosion would be a positive indirect effect.

### *(c) Cumulative Effects*

Cumulative effect would also be positive, in that the positive effects realized through implementation of the treatments contained in this alternative would not be negated by additional actions of projects in the near future.

## *(3) Alternative C*

### *(a) Direct Effects*

The direct effects of implementing Alternative C are similar in nature to the proposed action. If this alternative is implemented, there is a direct positive effect to archaeological sites. This alternative would insure archaeological site protection through the elimination of all non-system road motorized traffic in the Fourmile area. Therefore, the net beneficial direct effects would be greater than those achieved through implementation of the proposed action alternative.

### *(b) Indirect Effects*

The indirect effect of implementation of this alternative would be beneficial and probably to a greater extent than implementation of the proposed action alternative. Implementation of Alternative C would result in significant reduction in erosion and soil loss on and around archaeological sites.

### *(c) Cumulative Effects*

Cumulative effects would be beneficial and to a greater net extent than through implementation

of the proposed action alternative.

## **5. Recreation**

### **a) Affected Environment**

Motorized recreation is the dominant human use of the Fourmile area. Most is day use recreation, occurring in the spring and fall, when temperatures are cool, and the high mountain areas to the west are snow covered and inaccessible. Deer and elk hunting are common in the area. Winter recreation use, occurs mostly below snowline at approximately 9,000 feet. Most of the summer use and overnight camping occurs on the long weekend holidays of Memorial Day, Fourth of July, and Labor Day. Residents living close to Fourmile also use the area for morning and evening walks and drives during the heat of the summer. The public has a limited understanding of the existing rules and regulations for motorized travel in the area.

Many travel routes go through or near private land, affecting 47 private inholdings. Current recreation activities include: driving for pleasure, off-highway vehicle driving with ATVs, motorcycles, and 4 wheel drive vehicles, mountain biking, horseback riding, rock climbing, wildlife viewing, nature study, fishing, hunting, rock hounding, camping, picnicking, firewood gathering, Christmas tree cutting, and hiking. Reasonable access for all of these activities is very important to the recreating public, especially during the winter when there are very few snow free areas available. Recreation users have created about 75 miles of unauthorized road and trail routes. In addition, four areas (about 40 acres total) are very heavily used as motorized play areas, with a high density of off road and off trail travel routes. There are many additional shorter routes going to dispersed campsites that were not inventoried separately.

Currently there are four areas that have been used intensively for off road and trail motorized recreation, commonly known as “play areas”. They are located just north and south of County Road 304, north of County Road 375, adjacent to Fourmile Creek in an area known locally as Spanish Mill and in an unnamed drainage just south of the old Fourmile Homestead. The citizens group could not agree on a location for this intensive use and deferred this choice back to the agencies. The agencies ID team spent two plus days in the field trying to locate a place where this activity could occur, but were unsuccessful in locating an area.

In the past and currently, travel management policies, signing, and enforcement have been different for the BLM and the Forest Service. The Forest Service limited travel to designated white arrow roads in 1976, and the BLM restricted travel to existing routes in 1996. Because the agency boundaries are unclear in the Fourmile area, the different management and policies have, in part, resulted in confusing agency travel policies.

The recreation opportunity spectrum (ROS) for Fourmile has been delineated with a wide range of opportunity areas. Recreation opportunities in Fourmile currently include about: 47,057 acres of Roaded Natural (RN), 26,905 acres of Semi-Primitive Motorized (SPM), 2,525 acres of Semi-Primitive Non-Motorized (SPNM), and 9,027 acres of Primitive Wilderness (4,557 acres), and Wilderness Study Area (4,470 acres). See Glossary for ROS definitions.

There are portions of four inventoried roadless areas, for a total of 28,623 acres. These areas were identified in 1979 during the second Roadless Area Review and Evaluation process, known as RARE2. One of the areas has two system roads now that were analyzed and addressed in the Forest Plan Environmental Impact Statement. The other areas have numerous unauthorized roads and trails.

Historically, many of the same activities occurred in Fourmile, only most of the travel was by foot, horse, and wagon. As more people and a variety of vehicles come to the area, more routes and more conflicts between users have arisen.

About ten years ago, the Forest Service and BLM permitted a motorcycle recreation event called an Enduro. Because of this event, more motorcyclists learned about the area, and use greatly increased, especially in the Midland Hill area. The Enduro, however, has not been held since 1999. There has also been increased use and availability of ATVs and high performance trail motorcycles. Since about 1988, a commercial guide has offered horse-riding tours in the Midland Hills area.

About 1996, the Quiet Use Coalition was formed. This group elevated the concerns over recreation use land allocations, especially with divisions between motorized and non-motorized activities. The Upper Arkansas Motorized Recreation Coalition was formed shortly after the Quiet Use Coalition. This group promotes motorized recreational opportunities throughout the Upper Arkansas River Valley.

Increases in population, area popularity among motorized users, availability of improved OHVs, and economic factors also contributed to more motorized use, and a lot of the off road travel impacts that exist now. Motorized use in the Fourmile area reached its peak about 1999.

#### Desired Future Condition

The vision of the Fourmile Citizen's Group is to "Create a travel management plan which provides access for responsible uses, reduces conflicts between users, private property owners, and wildlife, and improves public land health". The desired future condition for recreation incorporates that vision. Additionally, agencies will provide a consistently managed road and trail system that is environmentally and economically sustainable. Users of the Fourmile area will continue to work together to improve overall compliance with BLM and Forest Service travel regulations.

#### Key Issues

The key issues in recreation are public access and conflicts between users. The objective is to cooperatively designate and maintain a system of authorized roads, trails and closures. Another objective is to eliminate and rehabilitate unauthorized roads in the WSA and roadless areas.

### **b) Environmental Consequences**

## *(1) Effects Common to All Alternatives*

### *(a) Cumulative Effects*

Over the past 100 years the Forest Service and other landowners in the Four Mile Travel Project Area have been building roads and logging. The result is that undeveloped areas have lost their unroaded character or shrunk to the point that few unroaded areas remain, and those that remain are relatively small and in some cases, narrow. None are over 5,000 acres in size.

In the foreseeable future, recreation on National Forest System Lands will continue (though perhaps at an increased annual rate from past years). However, in the Four Mile Project area, most recreation opportunities will be confined to areas that have already been affected by past recreation activities. This is because the areas that are currently undeveloped are steep, and/or rocky, thus making future recreation entries economically marginal or unsuitable. Therefore, further recreation under the Proposed Action and Alternative C will have little cumulative effect on the Numbers, Browns Creek, and Antero Reservoir Composite watersheds, because future road building in these areas appears to be unlikely. The characteristics of these areas that exist today are likely to persist well into the future, regardless of recreational use in the peripheral areas.

## *(2) No Action Alternative*

### *(a) Direct Effects*

The current number of routes and limited management will provide maximum recreation use and access to all parts of the area. Roadless Areas will continue to have unauthorized roads and unauthorized use until action is taken.

### *(b) Indirect Effects*

Lack of consistent management may lead to confusion and increase conflicts between users. Off road and trail travel and unauthorized routes may increase.

### *(c) Cumulative Effects*

When combined with other management activities, there could be more routes, confusion, and conflicts. Combined over time, this will move the Fourmile Area farther away from meeting Forest and BLM Standards, travel management policies, laws, and regulations.

## *(3) Proposed Action Alternative*

### *(a) Direct Effects*

The proposed number of routes and management in the Fourmile Area would provide reasonable access, and more balanced levels of use for most users.

(b) Indirect Effects

The proposed level of management will reduce confusion, reduce conflicts between users, and increase cooperation. Unauthorized off-road and trail travel will decrease, and unauthorized routes will be rehabilitated. The Fourmile area will move toward meeting Forest Service and BLM plan standards, laws, and regulations.

(c) Cumulative Effects

When combined with other management activities, new routes would be analyzed using the same criteria, and either closed or added to the system. The Fourmile Area would move closer to meeting Forest Plan Standards, travel management policies, laws, and regulations.

*(4) Alternative C*

(a) Direct Effects

All unauthorized roads, trails, and play areas would be closed, reducing public access and the number of motorized recreation opportunities in the Fourmile Area.

(b) Indirect Effects

Motorized users may feel their views were discounted and motorized recreation opportunities severely reduced. This may increase conflicts between users, vandalism, and off road and trail travel violations. There may be less overall public support for route closures and rehabilitation efforts may fail.

(c) Cumulative Effects

When combined with other management activities, there could be more opposition to agency management and more conflicts in the area. All of these combined over time, could move the Fourmile Area and the agencies farther away from meeting Forest Plan Standards, travel management policies, laws and regulations.

## **6. Wilderness and Wilderness Study Areas**

### **a) Affected Environment**

Congress designated the 43,410-acre Buffalo Peaks Wilderness in the Colorado Wilderness Act of 1993. This project includes 4,563 acres of the wilderness. Elevations range from 9,200 feet to 13,326 feet. The area lies along the north-south ridge between the Arkansas and South Platte River drainages. Approximately 67% of the area is forested with the other 33% consisting of alpine lands, talus slopes, rock outcrops, meadows, and brushlands.

Early logging occurred in the late 1800's or early 1900's for production of railroad ties, mine

props, house logs, and bridge timbers. It is not known whether this logging, wildfire, or logging followed by wildfire is responsible for the understocked, seedling/sapling and pole size stands present in the area.

Buffalo Peaks is popular for its unconfined primitive recreation values, however, does not receive the pressure as found on the west side of Arkansas River Valley in the Collegiate Peaks Wilderness. One trailhead is located within the project area that provides access into the Wilderness. Two additional access points are located on the South Park Ranger District.

The Browns Canyon Wilderness Study Area (WSA) varies in elevation from about 7,500 feet near the Arkansas River to about 8,400 feet near the eastern boundary. Topography is very rugged with many mountains, hills, canyons, and gulches. Understory vegetation throughout the area is sparse. Pinyon and juniper are the most common vegetative types. Ground cover includes rabbitbrush, blue gramma grass, mountain muhly, Indian ricegrass, prickly pear cactus, and yucca. The WSA is primarily in a natural condition, although there are a few imprints of man. A few small abandoned mine sites and old cabin foundations remain, that are generally not visible from more than 75 feet because of topographic and vegetative screening. An old way that was legally closed in 1976 goes through the WSA and is approximately 3 miles long, about three-quarters of a mile is cut and filled, but is not visible except from the site. Many of the old travelways are still being used by unauthorized motorcycles and ATVs.

Canyons and gulches offer outstanding opportunities for solitude since they block out sites and sounds. These specifically include Little and Middle Cottonwood Creeks, Cottonwood Creek, Spring Gulch, Sawmill Gulch, Green Gulch, and other unnamed gulches.

The former Denver and Rio Grande Railroad now the Union Pacific Railroad comprise approximately three-fourths of the western boundary. This railroad is currently not in operation, but could begin operation again, if feasible. There is also a proposal for a Rails-to-Trails trail system if the line is ever officially abandoned.

#### Desired Future Condition

The WSA will continue to be managed for its wilderness values until Congress officially adds the area to the National Wilderness Preservation System or removes it from further consideration as Wilderness. It is desirable to maintain this area in its natural state.

The Buffalo Peaks Wilderness will continue to be managed under the Wilderness Act of 1964. Those wilderness values that qualified the area need to be maintained.

#### Key Issue, Objective or Meeting Forest Plan Standards (and Guidelines), and Applicable Law

Providing reasonable recreational access was a key issue the public identified during initial scoping. Reasonable access is defined in Chapter 1. Buffalo Peaks Wilderness and Browns Canyon WSA provide some of the best opportunities for primitive non-motorized recreation. Some opportunities for non-motorized recreation exist outside these areas but not to the extent

available in the Wilderness and WSA.

Browns Canyon WSA will continue to be managed under BLM (H-8550-1) Interim Management Policy and Guidelines for Lands under Wilderness Review.

## **b) Environmental Consequences**

### *(1) No Action Alternative*

#### **(a) Direct Effects**

Direct effects could occur to the Wilderness and Wilderness Study Area as a result of no action being taken in the Fourmile Area. Errant use of Off Highway Vehicles (OHVs) could impact these areas as the public continues to have difficulty following a travel system. Unauthorized use of OHVs in the Wilderness and WSA could have a direct effect on the areas Wilderness Values. Lack of public education related to those wilderness values could further impact the areas characteristics.

#### **(b) Indirect Effects**

Indirect effects would be the same as stated in the “Direct Effects” consequences.

#### **(c) Cumulative Effects**

Continued unauthorized use by OHVs in the Wilderness and WSA may impact Wilderness characteristics and values. Loss of these characteristics and values could be a factor in the Browns Canyons WSA not becoming part of the National Wilderness Preservation System.

### *(2) Proposed Action Alternative*

#### **(a) Direct Effects**

Designation of non-motorized trails in the WSA would have positive benefits for the WSA and those looking for unconfined primitive recreation. The public would better understand the opportunities for solitude and non-motorized recreation through increased public education. The current authorized trails in Buffalo Peaks would continue to be managed for non-motorized recreational opportunities. No new actions are proposed within the Wilderness area.

#### **(b) Indirect Effects**

Same as direct effects except the public would have more opportunities to learn about Wilderness principles through on-going public education efforts. These learned principles may benefit other wilderness areas.

#### **(c) Cumulative Effects**

There are no known cumulative effects of the proposed action in combination with reasonable foreseeable future actions on the wilderness or wilderness study area.

*(3) Alternative C*

(a) Direct Effects

Non-motorized trails would be designated in the WSA. Motorized vehicle trespass may increase due to fewer miles of motorized opportunities in the area.

(b) Indirect Effects

Additional user created non-motorized trails may be developed in the WSA. These user created routes may impact the areas wilderness characteristics and values.

(c) Cumulative Effects

There are no known cumulative effects of this alternative in combination with reasonable foreseeable future actions on the wilderness or wilderness study area.

## **7. Fire**

### **a) Affected Environment**

The wildfire risk in the Fourmile area is historically documented. Since 1955, there have been more than 130 fire starts in the area. Most of the fires are less than one acre, lightning caused fires. The general area conditions (sandy soils, limited and patchy understory vegetation) contribute to the lack of spread rate. Little acreage has been burned to date, but current fuel loading, especially in older and more dense stands of trees increase the overstory density presents opportunities for that pattern to change.

Limited field review shows ponderosa pine disappearing due to encroachment by pinyon-juniper. Due to the lack of fire in the area, fuel loadings are such that catastrophic fires are likely to occur in the future. Such a fire could wipe out much of the ponderosa pine component. Pinyon-juniper stands have become thick enough that fire may start there and run into nearby thick Douglas fir stands. This could be a very large fire that could have negative effects on the watershed.

A current and increasing mountain pine beetle epidemic is increasing the volume and area of large standing and down dead fuels. Refer to the Vegetation Section for more information on the epidemic.

The Bassam Ridge area north to Castle Rock Gulch is in need of treatment by prescribed fire. Some plantations, planted by Civilian Conservation Corps (CCC) crews in the 1930s, have never seen fire. Because of this, these plantations could use some thinning and more importantly,

pruning by under burning. There are stands of larger ponderosa pine and mixed conifer that could benefit from a prescribed burn.

There is limited wildland urban interface fire risk in the Fourmile Area, mostly involving isolated cabins and ranches. This condition is not expected to change rapidly in the near future, as there is little development of the inholdings or private land bordering public lands. The highest potential for wildland fire/urban interface is along the east side of the Arkansas River, the Highway 24 corridor, and the subdivisions near Trout Creek Pass. At present, there is enough roaded accessibility for firefighters to take the necessary action on wildland fires.

Desired Future Condition

Refer to Vegetation Desired Future Condition section.

## **b) Environmental Consequences**

### *(1) Effects common to all alternatives*

All of the alternatives will provide adequate road access for planned prescribed burns and wildland fire suppression activities. If any new roads are needed for planned burns, they will be analyzed as part of that individual project. It is anticipated that these roads, if any are needed, will be temporary (less than 1 year) in nature, open only for administrative access, and rehabilitated and reseeded when no longer needed.

There is potential for cumulative impacts to soil and watershed resources from fires. This is discussed in the Soils section.

### *(2) No Action Alternative*

#### *(a) Direct Effects*

The largest number of roads is left open to travel in this alternative. This will allow for the greatest motorized access for firefighters. It also leaves open a larger area for human caused fire starts along travel ways.

#### *(b) Indirect Effects*

Continued deterioration of travelways will make access more difficult and unsafe.

### *(3) Proposed Action Alternative*

#### *(a) Direct Effects*

There are fewer roads open in this alternative as compared to the No Action. This allows fewer maintained routes for motorized firefighting access. Fire engines will not be able to travel as fast

on closed routes because of the work that has been done to rehabilitate the road. However, the improvements to the designated travel system may increase response time. It leaves less area open for human caused fire starts along travel ways.

(b) Indirect Effects

Firefighter response time to some wildland fires may be longer because crews would have to hike into areas they may be able to drive to now (routes that will be rehabilitated, reseeded and modified under this alternative).

(4) *Alternative C*

(a) Direct Effects

The least amount of motorized access for firefighters would be available. It also leaves open the least potential for human caused fire starts along travel ways.

(b) Indirect Effects

Firefighter response time to some wildland fires may be longer because crews would have to hike into areas they may be able to drive to now (routes that will be rehabilitated and reseeded under this alternative).

## **D. Biological Resources**

### **1. Terrestrial Wildlife (Management Indicator Species)**

#### **a) Affected Environment**

Management Indicator Species (MIS) for this analysis were selected from all MIS for the Forest (USDA 1983). Direction for the selection of MIS comes from Forest Service Manual 2621.1 - Selection of Management Indicators. *“Select management indicators for a forest plan or project that best represent the issues, concerns, and opportunities to support recovery of Federally-listed species, provide continued viability of sensitive species, and enhance management of wildlife and fish for commercial, recreational, scientific, subsistence, or aesthetic values or uses. Management indicators representing overall objectives for wildlife, fish, and plants may include species, groups of species with similar habitat relationships, or habitats that are of high concern”*. Based on this direction, mule deer, bighorn sheep, and elk were selected as MIS.

Except for the road area, this project does not modify vegetation. Although road and trail use potentially affect many species, the selected MIS species are most susceptible to the road influences and have the greatest amount of data available to conduct analyses and to display relative effects.

The project area provides a variety of MIS habitat types. The Colorado Division of Wildlife (CDOW) has mapped various species distribution areas (CDOW 1998). These maps include the summer, winter, and overall range distributions for the selected MIS. Much of the project area contains areas used seasonally (Table 8). CDOW has also mapped elk calving and bighorn sheep lambing areas (production areas). Mule deer fawning areas are not yet mapped. Overall, the project area provides good to excellent habitat for bighorn sheep, elk, and deer (J. Vayhinger, pers. comm.).

Habitat types (cover types) in the project area include pinyon/juniper (29%), Douglas fir (23%), ponderosa pine (14%), grassland (11%), aspen (8%), unknown type (7%), spruce/fir (3%), lodgepole pine (2%), barren/rock (1%), irrigated agriculture (1%), and shrub land (1%). Bristlecone pine, limber pine, alpine tundra, blue spruce, and wetland cover types also occur in the project area and represent less than one percent of the total project area.

### MIS Habitat Relationship and Trends

The following trend information is summary excerpts from the Pike/San Isabel Comanche Cimarron MIS monitoring report (Tapia 2001).

The Forest Plan FEIS indicates that these species were selected as a management indicator species on Pike/San Isabel National Forests because: 1) the public has a high concern for this species and its habitat, and 2) the public has a high interest for hunting and viewing. In addition, bighorn sheep were also selected because they have special habitat needs.

#### *(1) Bighorn sheep*

### Population Trends

Global and Colorado bighorn sheep populations have experienced declines, but are thought to be stable (COVERS 2001). Bighorn sheep in Colorado experienced a major decline in recent history due to lungworm pneumonia (Fitzgerald et al. 1994). They seem to be highly vulnerable to disease (Lawson and Johnson 1982). Their distribution has constricted due to some habitat changes (Wakelyn 1987), but reintroduction/transplant management has proven effective. There was a recent decline to approximately 2,200 animals in 1970 but populations have rebounded (Fitzgerald et al. 1994).

Bighorn sheep are intensively managed in Colorado with a limited harvest of mature sheep. Numbers have been increasing or stable in Colorado, if population numbers from management units open to public hunting since 1991 are any indication of population trends. No bighorn sheep population studies have been conducted on the Pike/San Isabel National Forests to measure the direct effects of forest management activities on bighorn sheep populations. The CDOW has made population estimates of sheep numbers using ground and aerial surveys (J. Vayhinger, pers. comm.). There are two groups of sheep in the project area, roughly separated by Highway 285. The group to the north of 285 is estimated at 200 sheep with approximately 40 sheep using the area in the winter. The southern group is estimated at 150 sheep with approximately 15 sheep

using the project area year-round.

Sheep likely have been in the project area since pre-European settlement. Bighorn sheep were trans-located to Browns Canyon and an area near Salida in the early 1980s and again to Ruby Mountain in 1985. Of the 20 sheep introduced in 1985, 6 to 8 moved to Castle Rock Gulch and 12 to 14 moved near Bald Mountain and Arnold Gulch and integrated with sheep already present. In 1999, the Castle Rock sheep had naturally increased to approximately 15 sheep. In January 1999, the Division of Wildlife released an additional 12 sheep into the Castle Rock area. Six of these were observed dead and determined to have pneumonia by December 1999.

#### Habitat Trends and Relationships

Bighorn sheep habitat relationships are well known. Their habitat consists primarily of grasslands or grass/shrub habitats next to, or intermixed with precipitous terrain characterized by rocky slopes, ridges and cliffs, or rugged canyons. The rolling hills and low-growing vegetation allows bighorn sheep to see predators from a distance. The rugged terrain serves as escape cover and lambing areas. Forage, water, and escape terrain are the most important components of bighorn habitat (Tesky 1993; Fitzgerald et al. 1994; Rodrick and Milner 1991). See Tesky (1993) for a detailed description of bighorn sheep habitat requirements.

Human disturbance within a half mile of bighorn sheep habitat, especially during winter and through mid-June (lambing), contributes to displacement and population decline (Rodrick and Milner 1991). Human activities reduce the bighorn sheep numbers by decreasing habitat, causing them to reduce or terminate their use of prime habitat, stop migration, or split from large herds into smaller herds (Tesky 1993). Competition for habitat with livestock can also cause declines in density of bighorn sheep populations (Tesky 1993).

#### (2) *Elk*

##### Population Trends

Global and Colorado elk populations are known to be increasing (COVERS 2001). Elk are widespread throughout northern United States and southern Canada. They are intensively managed and there is good data on population size and trends (Fitzgerald et al. 1994; Zeveloff 1988; and Peek 1982). Elk range is expanding due to reintroductions, management, and habitat conversion (COVERS 2001). No elk population studies have been conducted on the Pike and San Isabel National Forests to measure the direct effects of forest management activities on elk population numbers.

Colorado Division of Wildlife has made population estimates of elk numbers using ground and aerial surveys (J. Vayhinger, pers. comm.). The project area is in the Buffalo Peaks elk herd. The post-hunting season population estimate for the entire herd is 3,900 elk. Approximately 600 elk use the project area during the winter and 200 elk use the area in summer.

##### Habitat Trends and Relationships

Habitat relationships of elk are well known. Because elk have had a historically wide distribution, their preferred habitat also varies widely (Snyder 1991). Elk tend to inhabit coniferous forests associated with rugged, broken terrain or foothill ranges. During summer, elk spend most of their time in high mountain meadows in the alpine or sub alpine zones or in stream bottoms (Adams 1982). Studies of elk slope preferences indicate elk use a variety of slope percents, although they choose slopes in the 15 to 30 percent class most frequently (Skolvin 1982). Elk may use areas that are more open during spring and summer because of earlier spring green-up (Edge et al. 1987). During hot summer months, elk seek shaded, cool habitats (Leege 1984). Use of forage areas depends on proximity to cover. Use is typically concentrated in 200 to 600 feet of cover edge. Either cover or forage may be limiting to elk, particularly on winter ranges or calving habitats (Roderick and Milner 1991). Forest fires creating a mosaic of thermal and hiding cover and forage areas have been shown to increase carrying capacity (Martinka 1976). Open road densities greater than 1.5 miles per square mile of habitat on summer range or one mile per square mile of habitat on winter range are also considered a limiting factor (Roderick and Milner 1991). Elk habitat requirements are described in detail by Snyder (1991), Hoover and Willis (1984), and Skolvin (1982).

### *(3) Mule Deer*

#### Population Trends

Global and Colorado mule deer populations are known to be increasing (COVERS 2001). There was a population decline at the turn of the century, but mule deer now has an unprecedented distribution (Mackie et al. 1987). If hunting numbers are any indication of population trend, harvests have been increasing since 1975 (Fitzgerald et al. 1994). No mule deer population studies have been conducted on the Pike and San Isabel National Forests to measure the direct effects of forest management activities on mule deer population numbers.

The Colorado Division of Wildlife has made population estimates of mule deer numbers using ground and aerial surveys (J. Vayhinger, pers. comm.). The project area is in the Cripple Creek deer herd. The post-hunting season population estimate for the entire herd is 10,150 deer. Approximately 1,600 deer use the project area during the winter and 175 deer use the area in summer.

#### Habitat Trends and Relationships

Habitat relationships of mule deer are well known. Mule deer are most likely to be found in open forested regions or on the plains and prairies (Snyder 1991). They prefer rocky or broken terrain at elevations near or at the subalpine zone in the mountainous regions of the West (Carpenter et al. 1981). They are also found in alpine, montane, and foothill zones. Mule deer seek shelter at lower elevations when snows become deep. In open prairie regions mule deer tend to concentrate in river breaks and brushy stream bottoms (Mackie et al. 1987). In the high ranges of the Rocky Mountains, mule deer migrate during winter, sometimes moving 50 to 100 miles (Mackie et al. 1987; Wallamo 1981). Open road densities greater than one mile per square mile of habitat are considered a limiting factor (Hoover and Willis 1984). Mule deer habitat

requirements are described in detail by Snyder (1991), Mackie et al. (1987), and Hoover and Willis (1984).

Table 8 – Acres of seasonal habitat and percent of total in project area for MIS.  
Total Project Area acres = 100,622.

<b>Range</b>	<b>Elk</b>		<b>Mule Deer</b>		<b>Bighorn Sheep</b>	
	Acres	%	Acres	%	Acres	%
Summer	100,622	100	100,622	100	77,271	77
Winter	91,386	91	94,262	94	50,099	50
Overall	100,622	100	100,622	100	77,271	77
Reproduction	11,088	11	-	-	9,308	9

#### Desired Future Condition

Provide for the habitat needs and maintain habitat for all wildlife species.

#### Forest Plan Standards and Guidelines Applicable To This Resource

The specific guidelines are listed in Appendix A. However, the capability and effectiveness standards for each management area are listed in the table below.

Table 9 – Habitat Capability and Effectiveness Standards by Management Area.

Management Area	Habitat Capability (in percent of total potential capability)	Habitat Effectiveness (in percent of total potential effectiveness)
2B	60	No standard
4B	80	80
4D	70	80
5B	80	90 (winter)
6B	60	No standard
9A	80	No standard

Habitat capability is the estimated ability of an area, given existing or predicted habitat

conditions, to support wildlife, fish or plant populations (USDA 1987). Habitat effectiveness is defined as the degree to which a physical wildlife habitat (food, water, shelter) is free from disturbances and therefore attractive for wildlife occupancy (USDA 1987). These habitat measures are estimated using computerized models.

## **b) Environmental Consequences**

### *(1) Effects Common to All Alternatives*

Wildlife populations undergo changes in habitat and modified animal behavior because of forest roads. Road avoidance behavior is common in large animals such as bighorn sheep, mule deer, and elk. Avoidance distances of 100 to 200 meters from roads have been reported for these species (Lyon 1985, Rost and Bailey 1979, Livezey 1991). Changes in daily movements and home range size, leading to changes in energy needs, are also affected by roads and road use (Cole et al. 1997). Generally, the effectiveness and capability of these species' habitat is negatively affected by the presence of roads.

Forest Plan Standards and Guidelines suggest goals for habitat effectiveness and capability in Management Areas by Diversity Unit. Other Forest Plan Standards and Guidelines may have densities more restrictive and are discussed in other resource sections. The tables, in Alternative Effects, represent wildlife habitat effectiveness and capability indices for elk by Management Area/Diversity Unit. Values are not listed in management area 8B (wilderness), as roads are not permitted in these areas. Primitive roads (low maintenance and infrequently traveled) have comparatively lower effects on capability and effectiveness than primary (1<sup>o</sup>) and secondary roads (2<sup>o</sup>); (high maintenance and more frequently traveled). Detailed information on the methods used for estimating these habitat measures can be found in the Four Mile Travel Management Plan Biological Report (project file).

The road miles in lambing and calving areas tables, in Alternative Effects, represent the open motorized route miles and percent decrease in open motorized route miles in sheep and elk production areas between action alternatives B and C from no action alternative.

### *(2) No Action Alternative*

#### **(a) Direct and Indirect Effects**

There would be no change in the present conditions under this alternative. Total open primitive and primary/secondary-motorized routes would remain at 285.1 miles.

Primitive open motorized route density is highly variable among diversity unit/management area polygons and ranges from 0.42 to 6.44 mi/mi<sup>2</sup>. All primitive road density values among analysis areas result in habitat effectiveness values that meet Forest Plan Standards and Guidelines. This correlates to line one of the diversity unit in the table below.

Primary (1<sup>o</sup>) \_and secondary (2<sup>o</sup>) \_open motorized route density is also variable and ranges from

0.00 to 7.03 mi/mi<sup>2</sup>. These density values result in five of the 17 analysis areas having primary and secondary road density values in excess of Forest Plan Standard and Guidelines goals. This correlates to line two of the diversity unit in the table below.

Habitat capability ranges from 10 to 96% among analysis polygons. Six of 17 analysis areas are below standards for habitat capability (noted in the table as **BOLD** numbers). This correlates to line three of the diversity unit in the table below.

Table 10 – No Action Alternative Diversity Unit Comparison.

No Action Alternative		Management Area					
Diversity Unit	Open Road Density	2B	4B	4D	5B	6B	8B <sup>1</sup>
222	primitive effectiveness	-	96	-	99	-	-
	1°/2° effectiveness	-	80	-	72	-	-
	capability	<b>10</b>	80	-	85	-	-
223	primitive effectiveness	-	97	97	-	-	-
	1°/2° effectiveness	-	95	<b>68</b>	-	-	-
	capability	55	91	70	-	-	-
224	primitive effectiveness	-	-	97	-	-	-
	1°/2° effectiveness	-	-	<b>65</b>	-	-	-
	capability	<b>49</b>	-	<b>64</b>	-	77	-
225	primitive effectiveness	-	95	-	96	-	-
	1°/2° effectiveness	-	<b>70</b>	-	100	-	-
	capability	<b>57</b>	<b>69</b>	-	93	78	-
226	primitive effectiveness	-	-	-	-	-	-
	1°/2° effectiveness	-	-	-	-	-	-
	capability	-	-	-	-	78	-
227	primitive effectiveness	-	-	97	97	-	-
	1°/2° effectiveness	-	-	77	100	-	-
	capability	-	-	79	96	74	-

Under the existing condition, some analysis areas are below Forest Plan Standards and Guidelines goals for habitat quality measures. Of the analysis areas having habitat measures below the Forest Plan goals, all are close (within 15%) of goals with the exception of one diversity unit/management area polygon (222/2B). Because of the way diversity unit 222 overlaps management area 2B, this polygon is the smallest in the project area (205 acres). Forest Road 375 is a secondary motorized route extending along the far western edge of this polygon and accounts for the majority of the open motorized route miles in this area. Because of this road's proximity to private developed lands and the unusually small area of its analysis area, the comparatively small habitat capability value generated by the habitat model should not be interpreted as being outside of Forest Plan Guidelines.

Open motorized routes in sheep lambing and elk calving areas include 24.9 and 29.4 miles, respectively.

Table 11 – No Action Alternative Miles of Road in Lambing and Calving Areas.

Lambing Area #	Miles	Miles Closed	% Change
1	3.0	-	-
2	6.45	-	-
3	16.0	-	-
All	24.9	-	-

Calving Area #	Miles	Miles Closed	% Change
1	0	-	-
2	0	-	-
3	3.8	-	-
4	4.2	-	-
5	4.0	-	-
6	8.8	-	-
7	8.7	-	-
All	29.4	-	-

### (3) Proposed Action Alternative

#### (a) Direct and Indirect Effects

Primitive open motorized route density is reduced under this alternative and results in meeting Forest Plan goals regarding habitat effectiveness (see Proposed Action table below).

Total open primitive and primary/secondary-motorized routes would be reduced to 208 miles, representing a decrease of 27% from the No Action Alternative. This correlates to line one of the diversity unit in the table below.

Primary and secondary open motorized route density is also reduced in some analysis polygons. This correlates to line two of the diversity unit in the table below.

Habitat capability varies among analysis polygons (range: 10 to 98 %). Six of 17 polygons are below standards for habitat capability (noted in the table as **BOLD** numbers), but move closer to meeting Forest Plan goals. This correlates to line three of the diversity unit in the table below.

Table 12 – Proposed Action Alternative Diversity Unit Comparison.

ALTERNATIVE B		Management Area						
Diversity Unit	Open Road Density	2B	4B	4D	5B	6B	8B <sup>1</sup>	9A
222	primitive effectiveness	-	96	-	99	-	-	
	1°/2° effectiveness	-	80	-	<b>72</b>	-	-	
	capability	<b>10</b>	81	-	85	-	-	
223	primitive effectiveness	-	99	97	-	-	-	
	1°/2° effectiveness	-	91	<b>68</b>	-	-	-	
	capability	<b>56</b>	93	70	-	-	-	
224	primitive effectiveness	-	-	97	-	-	-	
	1°/2° effectiveness	-	-	<b>65</b>	-	-	-	
	capability	<b>50</b>	-	<b>65</b>	-	78	-	
225	primitive effectiveness	-	96	-	97	-	-	
	1°/2° effectiveness	-	<b>70</b>	-	100	-	-	
	capability	<b>58</b>	<b>71</b>	-	96	80	-	
226	primitive effectiveness	-	-	-	-	-	-	
	1°/2° effectiveness	-	-	-	-	-	-	
	capability	-	-	-	-	79	-	

227	primitive effectiveness	-	-	97	98	-	-	
	1°/2° effectiveness	-	-	77	100	-	-	
	capability	-	-	80	98	75	-	

Open motorized route miles among lambing and calving areas are reduced by 50% and 21%, respectively, when compared to the No Action Alternative. The locations of the routes under this alternative are situated topographically to minimize disturbance to lambs and calves (R. Hancock, pers. comm. 2001).

Table 13 – Proposed Action Alternative Miles of Road in Lambing and Calving Areas.

Lambing Area #	Miles	Miles Closed	% Change
1	0	3.0	100
2	5.0	1.5	22
3	7.4	8.6	53
All	12.4	12.5	50

Calving Area #	Miles	Miles Closed	% Change
1	0	0.0	0
2	0	0.0	0
3	2.5	1.3	36
4	3.8	0.4	10
5	1.6	2.4	60
6	6.8	2.0	22
7	8.7	0.0	0
All	23.3	6.1	21

#### (4) Alternative C

##### (a) Direct and Indirect Effects

Primitive open motorized route density is reduced under this alternative and meets Forest Plan

goals for habitat effectiveness (see Alternative C table below). Total open primitive and primary/secondary-motorized routes would be reduced to 139.0 miles, representing a decrease of 51% from Alternative A. Primary and secondary open motorized route density is also reduced in some analysis polygons. Habitat capability varies among analysis polygons (range: 10 to 98 %).

Six of 17 polygons are below standards for habitat capability (noted in the table as **BOLD** numbers), but move closer to meeting Forest Plan goals.

Table 14 – Alternative C Diversity Unit Comparison.

ALTERNATIVE C		Management Area						
Diversity	Unit	Open Road Density	2B	4B	4D	5B	6B	8B <sup>1</sup> 9A
222	primitive effectiveness		-	97	-	99	-	-
	1°/2° effectiveness		-	90	-	<b>85</b>	-	-
	Capability		<b>10</b>	83	-	85	-	-
223	primitive effectiveness		-	99	98	-	-	-
	1°/2° effectiveness		-	98	<b>77</b>	-	-	-
	Capability		<b>57</b>	94	80	-	-	-
224	primitive effectiveness		-	-	99	-	-	-
	1°/2° effectiveness		-	-	<b>65</b>	-	-	-
	Capability		<b>50</b>	-	<b>65</b>	-	78	-
225	primitive effectiveness		-	97	-	100	-	-
	1°/2° effectiveness		-	<b>70</b>	-	100	-	-
	Capability		<b>58</b>	<b>72</b>	-	100	82	-
226	primitive effectiveness		-	-	-	-	-	-
	1°/2° effectiveness		-	-	-	-	-	-
	Capability		-	-	-	-	80	-
227	primitive effectiveness		-	-	98	99	-	-
	1°/2° effectiveness		-	-	<b>77</b>	100	-	-
	Capability		-	-	80	100	76	-

Open motorized route miles among lambing and calving areas are reduced by 76% and 35%, respectively, when compared to Alternative A. The locations of the routes under this alternative are also situated topographically to minimize disturbance to lambs and calves (R. Hancock, Colorado Division of Wildlife, pers. comm.).

Table 15 – Alternative C Miles of Road in Lambing and Calving Areas.

Lambing Area #	Miles	Miles Closed	% Change
1	0	3.0	100
2	4.7	1.8	26
3	1.2	14.8	92
All	5.9	19.0	76

Calving Area #	Miles	Miles Closed	% Change
1	0	0	0
2	0	0	0
3	1.4	2.4	64
4	3.8	0.4	10
5	1.6	2.4	60
6	3.8	5.0	57
7	8.7	0.0	0
All	19.2	10.2	35

*(5) Cumulative Effects Common to All Alternatives*

Recreation activities have greatly influenced the travel system in the project area. Increased use of vehicles for recreational use has resulted in an extensive “user-created” network of travel routes. These new routes become more established over time and eventually are viewed by the public as roads. The continued creation of new routes would decrease the habitat effectiveness and capability in the project area.

Other recreational activities in the project area have the potential to affect wildlife populations through disturbance. There are three authorized trails on the National Forest System lands: the Midland Bike trail, and the Four Mile and Salt Creek trail in the Buffalo Peaks Wilderness. There are thirteen permitted outfitter and guide operations providing 2095 public service/user days with activities including rock climbing, jeep tours, bicycling, hiking, backpacking, hunting, camping, and horseback riding. There are 4 permitted recreation events including a two-day

automobile hill climb, a one-day marathon foot race, a one-day burro race, and a two-day bicycling event. Ruby Mountain Campground has 19 family units and one boat launch. Collegiate Peaks Overlook has one toilet facility, one pavilion/shelter, and interpretive signs (M. Sugaski, pers. comm. 2001).

Public access facilitated by roads may also increase the likelihood of human caused wildfires. Wildfire has the potential to destroy habitat for all of the species considered in this analysis. However, access facilitated by roads also allows firefighting personnel to shorten their response time to wildfire incidents and may decrease the potential of wildfire spread.

There are six grazing allotments: Fourmile, Chubb Park/Bassam, Aspen Ridge, Sugarloaf Mountain, Midland Hill, and Ruby Mountain. Cattle are permitted from June 1 through October 31 on National Forest System lands. Cattle are permitted on BLM managed lands from fall through spring, dependent on the allotment. Forage utilization is light to moderate on National Forest System lands with range conditions rated as mostly good. BLM allotments in the lower elevations are in a somewhat lesser condition than the higher elevation FS allotments. Livestock grazing on public lands may reduce habitat capability by reducing the amount of foraging habitat available to elk and deer (S. Schroeder, pers. comm. 2001).

Wild and prescribe fire (past and planned) and the absence of fire change wildlife habitats in the project area. Since 1955, there have been more than 130 fire starts in the project area. Little acreage has burned to date but current fuel loading presents opportunity for that pattern to change (J. Kemm, pers. comm. 2001). Planned burning projects in the project area include 1) Kaufman Ridge Fuels Treatment (15,000 acres): from Mushroom Gulch, includes Kaufman Ridge, and runs south all the way to Castle Rock Gulch; 2) Bassam Park Fuels Treatment (1,500 acres): from Bassam Park area and north to Castle Rock Creek. The objectives of each of these projects include thinning stands, creation of suitable seedbeds for conifer regeneration, bighorn sheep habitat improvement stimulation regeneration of aspen, and reduction in hazardous fuel loadings throughout the area. It is predicted that only pockets of trees smaller than 0.5 acres will receive stand replacement fire.

The above permitted activities and projects will have both low, short-term negative effects and high, long-term beneficial effects. Cumulatively, these projects are not anticipated to negatively affect wildlife populations in the project area.

## **2. Terrestrial Threatened, Endangered, Proposed And Sensitive Species**

### **a) Affected Environment**

#### **Threatened, Endangered, and Proposed Species**

Threatened, endangered, and proposed (TEP) species with the potential to occur in Chaffee County (USDI 2001) are listed in Appendix C. The Colorado Natural Heritage Program (CNHP) database and Forest Service District files were consulted to determine known locations of any proposed, endangered, threatened, or sensitive species in the project area. No TEP species

locations were identified.

### *(1) Canada Lynx*

Suitable lynx habitat exists in the northern one third of the project area. Lynx analysis units (LAU) have been developed for the Forest (Ryke 2001) and project activities are proposed in the Buffalo Peaks LAU. This LAU contains the Clear Creek Corridor; an important travel corridor referred to as “landscape linkage corridor”. One wilderness trail occurs in the corridor inside the project area boundary.

Potential lynx habitat has been modeled based on vegetation type, precipitation, winter precipitation, topography, and snowshoe hare habitat (Ryke 2001). Vegetation types representative of suitable habitat include dense spruce-fir, Douglas fir, early seral lodgepole pine, mature lodgepole pine with developing understory of spruce-fir and aspen (Ruediger and others 2000). Dry forest types (ponderosa pine) were excluded and not mapped as lynx habitat. Potential habitat is defined as having the capability to provide necessary habitat components. Existing condition of suitable habitat may or may not meet the needs of a lynx for denning or winter foraging. Changes in condition of suitable habitat can occur from disturbances such as fire, wind events, harvesting or the lack of disturbances. Spruce-fir and mixed conifer with spruce, Douglas fir, lodgepole, and aspen characterize the suitable lynx habitat in the LAU.

The Canada Lynx Conservation Assessment and Strategy (CLCAS, Ruediger et al. 2000) provides conservation measures for the species throughout the United States. The document includes Conservation Measures for reducing or eliminating undesirable effects from management activities on Federal lands. The CLCAS contains one set of Conservation Measures directly applicable to this project. This measure deals with forest/backcountry roads and trails (see Standards and Guidelines below). The CLCAS says plowed roads and groomed over-the-snow routes may allow competing carnivores to access lynx habitat in the winter, thereby increasing competition for prey. The CLCAS suggests no information is available to indicate lynx avoid roads and therefore, makes no recommendations to manage road density. However, the document suggests that because the effects of road density are unknown, priorities for seasonal closures or restrictions, or reclamation may be appropriate.

### *(2) Bald Eagle*

Breeding bald eagles are rare in Colorado (USDA 1994b). No breeding evidence has been recorded on the Leadville or Salida Ranger Districts (CBAP 1998). However, a large nest located near the sightings of adult bald eagles was recently discovered along the Arkansas River north of the Project Area (District Files). There are no known nest sites in the project area. Therefore, this project will have no effect on the bald eagle.

### *Sensitive Species*

Sensitive species (USDA 1994a) with the potential to occur on the Leadville and Salida Ranger Districts are listed in Appendix C. The Colorado Natural Heritage Program (CNHP 2001)

database and Forest Service District files were consulted to determine known locations of any sensitive species in the project area. No CNHP records were identified for terrestrial wildlife. The CNHP database identified two occurrences of boreal toad (1994 and 1999). These occurrences were reported in the Buffalo Creek Wilderness.

A variety of vegetation types influenced by topography, climate, and precipitation provide for a variety of habitat types for sensitive species in the project area. Refer to the affected environment section under terrestrial wildlife for the percentage of habitat types. Habitat associations and species descriptions of the species evaluated in this document are located in the Biological Evaluation and Assessment for the Final Environmental Assessment for this project.

#### Desired Future Condition

- Provide for the habitat needs and maintain habitat for all wildlife species.

#### Key Issues

#### Issues Identified In Chapter One Applicable To This Resource

- Improve Public Land Health: increase the overall health of local wildlife populations Canada Lynx Conservation Assessment And Strategy Standards And Guidelines Applicable To This Resource (CLCAS)

#### **Programmatic planning-standards.**

- On Federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU.

#### **Programmatic planning-guidelines.**

- Determine where high total road densities (>2 miles per square mile) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas.
- Minimize roadside brushing in order to provide snowshoe hare habitat.
- Locate trails and roads away from forested stands occurring along stream bottoms
- Limit public use on temporary roads constructed for timber sales. Design new roads, especially the entrance, for effective closure on completion of sale activities.
- Minimize building of roads directly on ridge tops or areas identified as important for lynx habitat connectivity.

#### **b) Environmental Consequences**

##### *(1) Effects Common to All Alternatives*

#### Canada Lynx

An increase in groomed or designated over-the-snow routes and snowmobile play areas in the Buffalo Peaks LAU would have the potential to affect Canada lynx by increasing foraging competition by predators. There are none of these areas in the project area and no alternatives include adding these areas. Snow levels in the project area are rarely high enough to support snow machine or other snow sport travel.

The CLCAS provides guidelines for conserving lynx habitat. At this time, road density standards are not management requirements. Rather, the (< 2 miles per square mile) standard should be used when prioritizing opportunities for road closures. Therefore, all of the project's alternatives will have no effect on Canada Lynx.

### Sensitive Species

**Habitat loss and modification:** Roads convert large areas of habitat to non-habitat (Hann et al. 1997, Wisdom et al. 2000). Construction of roads removes habitat that could otherwise be continuous interior forest habitat and creates new edge habitat. Researchers in Minnesota (Hanowski and Niemi 1995) conducted surveys of songbirds along roads. They found 24 species of birds more frequently along roads than away from them and half of these species were edge-associated species. Increasing edge diversity of avian species may negatively affect interior species (Anderson et al. 1977).

Habitat loss may also occur indirectly because of increased human activities facilitated by road access. Many species considered in this analysis are dependant on coarse woody debris and are negatively affected by increased harvest of snags and downed logs along roads (Hann et al. 1997). Human access facilitated by roads may also increase the likelihood of human caused wildfires. Wildfire has the potential to destroy habitat for all of the species considered in this analysis.

**Habitat fragmentation:** In addition to effects caused by the conversion of habitat to road surface, roads cause changes in habitat and animal behavior, resulting in changes in wildlife populations (Lyon 1983). Roads fragment habitats by changing the structure of the landscape. Roads dissect patches of vegetation, increasing the area of edge habitat and decreasing the area of interior habitat.

**Biological invasions:** Building roads, maintaining roads, and travel on roads all present opportunities for the invasion of roadside habitats by exotic species. As equipment or vehicles travel on roads, they provide a point of entry for exotics. Exotics may spread farther away from roads into adjacent habitats. These invasions have potentially negative ecological effects on the landscape. Examples of noxious plants include knapweeds (*Centaurea diffusa*), ox-eye daisy (*Chrysanthemum leucanthemum*), toadflax (*Linaria vulgaris*), and leafy spurge (*Euphorbia esula*). Some forest interior species suffer increased rates of parasitism and predation through increased numbers of edge species. Roads remove forest cover when they intersect forested habitat. Robinson et al. (1995) found as percent forest cover decreased, nest parasitism by brown-headed cowbirds increased for nine species of birds. They also found increase nest predation rates for nine species of birds and associated the decrease with forest fragmentation.

**Forest diseases:** The presence of roads has little effect on tree disease. Travel along the roads however, may provide opportunities for the introduction of pests. Building and maintaining roads as well as travel on roads, may create wounds on trees as well as tree stumps, providing infection areas for root diseases. These diseases may spread to adjacent areas of habitat. Increase levels of tree disease from roads and road use may contribute to already infected stands of trees with disease levels outside of their historic range of variation.

**Road kill:** Lalo (1987) estimated one million vertebrates are killed on roads in the United States each day. Much of this number, however, is attributed to highway collisions. Most forest roads are designed for low-speed travel. Therefore, direct mortality on forest roads is not usually an important consideration for large mammals (Lyon 1984). Forest roads present a greater hazard to small mammals, amphibians, and reptiles. Small mammals are often “trapped” in the roadbed by roadside berms. Amphibians and reptiles are often drawn to roads because they are often open to sunlight and provide opportunities for basking in the sun.

**Reduced nesting/denning success:** Human disturbance to nesting raptors such as northern goshawk are suspected as a cause of nest abandonment (Reynolds et al 1992). Female wolverines are sensitive to disturbance in their natal den sites. Desertion has been documented by Copeland (1996) in Idaho.

**Barriers to dispersal:** The presence of a forest road and not its associated use can have negative effects on populations of small mammals, amphibians, and reptiles by creating barriers to dispersal. Oxley et al. (1974) found only three percent of white-footed mice and eastern chipmunks crossed roads during a recapture study. Swihart and Slade (1984) found only one percent of prairie voles and five percent of cotton rats were recaptured after crossing a narrow dirt road in Kansas. Both of these studies suggest the inhibitory effect of roads may have negative effects on population genetic diversity.

**Displacement:** The avoidance of roads, causing displacement, is common in large and small mammals. Bury et al. (1977) found areas of off-road vehicle use have a lower diversity, density, and biomass of small mammal species. The cause for these reduced measures of animal fitness appears to be related to changes in habitat modification by soil, vegetation, and microclimate changes (Knight and Cole 1991). Road avoidance is common in large mammals such as elk, bighorn sheep, and mule deer. Avoidance distances of 100 to 200 meters have been reported for these species (Lyon 1983).

## *(2) No Action Alternative*

### *(a) Direct and Indirect Effects*

There would be no change in the present conditions under this alternative. Disturbance from the motorized uses and loss of habitat from existing road system would continue. Effects to terrestrial plant and animal species from these route miles are not specifically known. However, the general effects of roads as described above (habitat loss and modification, fragmentation,

biological invasions, forest diseases, road kill, reduced reproduction, dispersal barriers, displacement) would occur at levels above other alternatives. The additional disturbed areas associated with roads may be beneficial to some plants associated with disturbed sites.

*(3) Proposed Action Alternative*

*(a) Direct and Indirect Effects*

There would be a reduction in the overall road miles and density, and the associated disturbance and habitat modifications associated with roads under this alternative. Total authorized primitive and primary/secondary-motorized routes would be reduced to 194 miles, representing a decrease of 23% from the No Action Alternative. Roads closed would be allowed to re-vegetate or receive restoration and, over time, revert to undisturbed conditions. Effects to terrestrial plant and animal species from these route miles are not specifically known. However, the general effects of roads as described above would occur at levels below the no action alternative. Plant species associated with disturbed sites (roads, roadsides) could be removed if road restoration occurs on roads to be closed under this alternative.

*(4) Alternative C*

*(a) Direct and Indirect Effects*

This alternative represents the greatest reduction in overall road miles and density, and associated disturbance and habitat modifications associated with roads. Total authorized primitive and primary/secondary motorized routes would be reduced to 139.0 miles, representing a decrease of 45% from the No Action Alternative. Roads closed would be allowed to re-vegetate or receive restoration and, over time, revert to undisturbed conditions. Effects to terrestrial plant and animal species from these route miles are not specifically known. However, the general effects of roads as described above would occur at levels below the No Action and Proposed Action Alternatives. Plant species associated with disturbed sites (roads, roadsides) could be removed if road restoration occurs on roads to be closed under this alternative.

*(5) Cumulative Effects Common to All Alternatives*

Please see “Cumulative Effects Common to All Alternatives” in the Terrestrial Wildlife (Management Indicator Species) discussion.

### **3. Aquatic Wildlife**

**a) Affected Environment**

Stability and characteristics of aquatic wildlife populations is dependent on their habitat. Impacts to wetland and stream habitats for this planning area are described in the Floodplain and other sections of this document. In summary, and to avoid duplication, aquatic habitats in the planning area are primarily impacted by travel routes through impairment due to sediment loads,

changes to water table elevations due to channel modifications runoff patterns, runoff rates, and vehicles in waterways.

There are several viable aquatic wildlife species populations present in this region. None are specifically imperiled due to the present transportation network. However, problems associated with travel management limit certain needs of those populations. These impacts are correctable, and are mandated in agency policy.

### Aquatic Management Indicator Species

Brook Trout is a Management Indicator Species (MIS) that occurs in the Fourmile area, specifically in Fourmile, Sevenmile, Castle Rock, and Trout Creeks, and Columbine Gulch.

The Forest Plan FEIS indicates that brook trout were selected as a management indicator species on Pike/San Isabel National Forests because: 1) the public has a high concern for this species and its habitat and 2) the public has a high interest for fishing. The Forest Plan general directions for brook trout are:

- Provide for the habitat needs of management indicator species on the National Forests.
- Manage waters capable of supporting self-sustaining trout populations to provide for those populations.
- Manage fish habitat, which is providing a fishery at or near its potential, to maintain fish populations at existing levels. Manage fish habitat that is determined to be limiting a fish population to a level below its potential, to improve habitat conditions that may be limiting.

### Population Trends

Brook trout are a non-native species introduced in Colorado streams some time after European settlement. They spread quickly throughout Colorado mountain streams competing directly with the native cutthroat trout species (Trotter 1987). Brook trout have displaced native trout from most of Colorado's high mountain streams, which is one of reasons that greenback cutthroat trout is a federally threatened species. The Colorado Division of Wildlife, U.S. Fish and Wildlife Service, U.S. Forest Service, and many other land management agencies have poisoned many streams and lakes to remove brook trout as part of an intensive effort to restore native trout species in Colorado (USFWS 1998).

Besides these intentional removals, Colorado brook trout populations seem to be declining, possibly because of competition with brown trout or infection of whirling disease (CDOW, Doug Krieger and Steve Puttmann, per. com. March 2001). The exact reasons for these recently observed declines are unclear. Brook trout do provide recreational fishing opportunities, but are a minor component of the overall fishery in Colorado. As a result, the Colorado Division of Wildlife does not systematically monitor brook trout populations (CDOW, Steve Puttmann, per. com. March 2001).

### Habitat Trends and Relationships

Brook trout habitat relationships are well known. Optimal stream habitat for brook trout is characterized by clear, cold water; silt-free rocky substrate in riffle-run areas; well vegetated stream banks; abundant instream cover; deep pools; relatively stable flow regime and stream banks; and productive aquatic insect populations (Raleigh 1982). See Raleigh (1982) for a more detailed description of brook trout habitat needs.

Forest management activities carried out under the Forest Plan requires protective buffers around wet areas to help maintain stream and riparian habitat. The U.S. Forest Service has carried out or proposes to carry out many stream and riparian habitat improvement projects on the Pike and San Isabel National Forest that will benefit brook trout and other trout populations (USFS 2000; Gallagher and Saulters 1998; Winters and Gallagher, no date).

### Summary

Brook trout populations may be declining in the state and the Pike and San Isabel National Forests. Riparian improvement projects and required riparian protection measures will likely be beneficial to brook trout populations on the Forests.

### Desired Future Condition

The health of aquatic resources needs to improve to meet land health standards set by the BLM and Forest Service in their land management plans. Improvement needs to come by reversing the negative affects in the trend of route proliferation and poor route maintenance to move towards meeting land health standards. For this planning area, it would be desirable to disconnect storm water hydrology from roads and to keep roads from being a conduit for runoff and affecting waterways.

To the extent possible, direct impacts to streams, riparian area, and tributary channels caused directly by routes and trails would be reduced through reduction in the number of crossings, miles of routes in or near drainages, improved route maintenance, and the implementation of road design BMPs. Direct and indirect disturbance of wetland vegetation, standing or flowing water is reduced so these areas can function properly to provide maximum benefits to aquatic wildlife population brought about from a healthy watershed. Reducing sediment loads would benefit aquatic wildlife.

### **b) Environmental Consequences**

Virtually each route segment has unique variables and has a setting situation that determines its relative impact to aquatic environments. Slope, soil, surrounding vegetation, distance to wetlands, and channel type are prominent variables which determine **direct**, **indirect**, and **cumulative** impacts to water. As discussed throughout, current floodplain resource condition in much of the planning area is degraded, which can impair aquatic wildlife species. Equally important to current condition is the trend for the un-managed growth of a route network that is moving towards further degradation. Predicted maintenance funding to manage the existing

system will not reverse the trend. These specific issues are addressed throughout this document. Table 7 (in the floodplain/riparian section), serves as a surrogate for the numerous indicators of road/water interaction, and shows there are number of routes that are in wetland environments. Trends for further degradation would not be changed in the No Action Alternative. The Proposed Action and Alternative C show substantial reductions in the amount of route/riparian interaction and both alternatives move in the direction of improving watershed condition. The table does not illustrate specific problematic routes but shows overall reductions within each alternative.

Additional effects, cumulative effects, and mitigation are listed in the Riparian and Floodplain section above.

#### **4. Vegetation and Timber Management**

##### **a) Affected Environment**

Three major vegetation communities exist in the Project Area. They are the pinyon-juniper, ponderosa pine, and Douglas fir communities. Isolated aspen stands are found in all three communities.

##### *(1) Pinyon-Juniper*

The pinyon-juniper stands are located on the lower elevation, extremely dry and rocky south facing slopes. These stands are mature to over mature and trees can be over 150 years in age. These trees grow extremely slow, but once established provide excellent cover and habitat for wildlife and site stability for erosive soils. Pinyon-juniper is the dominant community on the BLM managed lands.

Few past management activities have occurred in this forest type. Occasional firewood cutting of dead trees and cutting of junipers for fence posts has occurred in the area. In the past three years, isolated pockets of pinyon have died. The cause is unknown, but is being investigated. It appears to be caused by some form of a foliage disease that kills the new growth on the trees. Trees become weakened and eventually die.

##### *(2) Ponderosa pine*

Ponderosa pine is the dominant commercial tree species in the project area. Due to the drier sites, the ponderosa pines are smaller in height and diameter. Many trees are mature to over-mature with ages more than 120 years. Historically, natural fire played a role in keeping the ponderosa pine stands open, park-like, and widely spaced. Fire control in this community in the past 100 years, has allowed many of these ponderosa stands to become closed in and dense. This has contributed to these trees becoming weakened and infected with diseases and insects.

Past ponderosa pine timber harvest activities has mainly been located along the old railroad corridors where timber was cut for railroad ties, mining activities, and lumber. Cutting removed

the larger diameter trees. Today, the older and larger trees are in the rock outcrops and steeper slopes. Areas harvested in the past now have younger trees that are more densely stocked.

In the past four years, the mountain pine beetle (*Dendroctonus ponderosae* Hopkins) has infested many of these ponderosa pine stands. Firewood cutting has removed some of these infected trees, but the infestation continues at epidemic levels. Efforts are underway to complete site-specific environmental assessments (EAs) so treatment activities may be completed on these sites. Areas of concerns are Sevenmile Creek east of the Goddard Ranch; west of the Ranch of the Rockies; Trout Creek Pass, Chubb Park; McGee Gulch, Shields Gulch; and isolated stands in the Fourmile drainage, especially near the Little Annie Mine.

### *(3) Douglas Fir*

Douglas fir stands located in this area are primarily on the moister, north facing slopes. The stands normally are mixed with ponderosa pine and some aspen. Most of the Douglas fir stands are 120 to 140 years old. These stands are recovering from past attacks of the western budworm (*Choristoneura occidentalis* Freeman) that hit these trees 8 to 10 years ago. Many trees were weakened by the budworm, and subsequently attacked and killed by the Douglas fir bark beetle. This is still evident in many of the Douglas fir stands in Chubb Park and Kaufman Ridge. Some salvage harvest has occurred through several commercial timber sales and through public firewood gathering.

### Desired Future Condition

The lack of management activities and alterations of natural disturbance processes, such as fire exclusion, have changed the function, pattern, composition, structure, and diversity of the vegetation in the area. The current ponderosa pine stands are more homogenous in age classes and stand structure. As a result, these stands are now more susceptible to disease and insect attacks. It is desirable to maintain healthy forest cover and to reduce the infestation of disease and insects currently attacking many areas. Although Forest Plan Management Direction for the project area is not emphasized for wood fiber production, managing the vegetation in a healthy state supports the goals of the other resources.

## **b) Environmental Consequences**

### *(1) Effects Common to All Alternatives*

All of the alternatives will provide adequate road access for any future timber or vegetation treatment activities. If any new roads are needed for future management, they will be analyzed as part of that individual project. It is anticipated that these roads, if any are needed, will be temporary (less than 1 year) in nature, open only for administrative access, and rehabilitated and reseeded when no longer needed.

### *(2) No Action Alternative*

(a) Direct Effects

As more recreation use occurs in the area, an increase in user created roads and trails would be expected. People driving off roads for the purpose of illegally gathering firewood would increase the number of roads and cause more resource damage and potential vegetation loss.

(b) Indirect Effects

The greatest amount of area would be accessible for potential illegal firewood cutting.

*(3) Proposed Action Alternative*

(a) Direct Effects

A reduction in routes would have a positive effect in reducing the conflicts associated with recreation use, travel management and vegetation treatments. Road access will still be needed for treating the vegetation. The use of a single purpose or temporary road would still be allowed and authorized specifically for these projects. Following the treatment, these roads would be closed and rehabilitated as a part of the project.

(b) Indirect Effects

The design and scheduling of vegetation treatments may have a positive, indirect effect towards the decisions of road management on this alternative. If roads scheduled to be closed in this alternative are used in future vegetation projects, they may be closed either as part of the timber sale contracts or by revenue generated from firewood sales.

It will be more difficult for illegal firewood cutters under this alternative.

(c) Cumulative Effects

Cumulative effects of less roads and less exposure of the vegetation to forest users, could have a positive effect in an increase of wildlife snags throughout the project area. Disease and insect attacks would continue creating dead trees, but with less access, these trees would not be as easy to cut for firewood.

The design and implementation of vegetation treatment projects could be more concentrated to one specific area at a given time. This would minimize the disturbance to the areas.

*(4) Alternative C*

(a) Direct Effects

The reduction in roads would have the greatest positive effect on reducing the conflicts associated with recreation use and vegetation treatment.

(b) Indirect Effects

These would be the same as the Proposed Action.

(c) Cumulative Effects

These would be the same as the Proposed Action.

## 5. Range and Noxious Weeds

### a) Affected Environment

There are three Forest Service and three BLM cattle allotments that exist within the Fourmile Travel Management Project. They are as follows:

#### BLM

The Sugarloaf Mountain, Midland Hill and Ruby Mountain allotments allow for 261 animal unit months of grazing on the BLM lands. Cattle are permitted on BLM managed lands from fall through spring. Forage utilization is moderate on the BLM lands and the allotments are in a somewhat lesser condition than the higher elevation Forest Service allotments. The Midland Hill allotment is part of the winter grazing pilot project that the Forest Service has implemented on the Fourmile allotment. This allotment is now being test grazed in the winter as compared to the past spring use.

#### Forest Service

On all allotments, noxious weeds have been inventoried and control efforts have been on going for several years. The primary weeds of concern are Canada thistle *Cirsium arvense* (L.) Scop. and Leafy Spurge *Euphorbia esula* L.. Several range improvements (fences, stock tanks, etc) exist throughout the allotments. Inventories have been conducted to document the conditions of these improvements and are on file at the District office. Treatment of weeds and monitoring are done on an annual basis. Currently, sites are being investigated as there is a need to locate and develop new water sources. The following table shows a summary of the Forest Service allotments.

Table 16 – Forest Service Allotment Information for the Fourmile Area.

Allotment	Fourmile C&H*	Bassam/Chubb Park C&H	Aspen Ridge C&H
On Date	June 1	June 1	June 10
Off Date	September 15	October 31	September 30
Permitted #s	50 Cow/Calf (c/c) pairs (Total AUMs = 231)	270 c/c & 33 c/c = 303 c/c pairs (Total AUMs = 1,545)	294 c/c & 38 c/c = 294 c/c pairs (Total AUMs = 1,007)

## Fourmile C&H Allotment

The Fourmile C&H allotment includes approximately 14,000 acres of National Forest System lands and has historically been permitted for 65 cow/calf units but in recent years has only been stocked at 50 cow/calf units. The current permittee has had the permit since 1988. Current upland range condition is good to excellent and moving in an upward trend. In 1999 and 2000, the allotment was not grazed. Before 1999, conflicts with recreation use, travel management, and cattle grazing have occurred. The main issue is that high recreation use and cattle grazing occur at the same time of the year. Gates are left open and cattle drift into pastures different than planned in the annual operating plan.

The permittee has requested and the Forest Service has approved, to change the grazing season to November 15 through March 31 for a three-year trial study period. The operating season was extended by one month by adding a 3507-acre BLM pasture to the allotment for 110 AUMs.

Preliminary specialist's review of this project suggests winter grazing may reduce the user conflicts, minimize effects on the riparian areas, and reduce erosion and sediment entering the stream course. Effects to big game wildlife are not anticipated and may improve wildlife distribution over the allotment. Monitor plots and site review will be conducted in the three-year trial period to determine effects. If positive, revising the allotment management plan will be considered.

## Bassam/Chubb Park C&H Allotment.

The Bassam/Chubb Park C&H allotment includes approximately 52,000 acres of National Forest System lands and has historically been permitted for 303 cow/calf units. The current permittees have had the permit for one season and operate during June 1 and October 31. Current conditions of the upland range are good, moving in an upward trend.

User conflicts between recreationists and cattle grazing are not as serious of an issue on this allotment as compared to the Fourmile allotment. This allotment is much larger; more isolated, and does not have the road density the Fourmile allotment contains.

## Aspen Ridge C&H Allotment.

The Aspen Ridge C&H allotment includes approximately 14,457 acres of National Forest lands and has historically been permitted for 294 cow/calf units. The current permittee has had the permit since 1930 and operates during June 10 and September 30. Current conditions of the upland range are good, moving in an upward trend.

User conflicts between recreationists and cattle grazing are not as serious of an issue on this allotment as compared to the Fourmile allotment. This allotment is more isolated, and does not have the road density that the Fourmile allotment contains. More recently, cattle movement off the allotment onto BLM and lands managed by Arkansas Headwaters Recreation Area near Ruby Mountain Campground has become a concern. In order to keep the cattle out of the campground,

approximately ½ mile of fence has been constructed. This should help eliminate cattle moving into the campground.

#### Desired Future Conditions

In these allotments, the desired future condition is to maintain a stable and upward trend in the overall range condition. It is also desired to control the existing populations and the spread of noxious weeds in the project area. Protecting and improving the existing range improvements (fences, stock tanks, etc.) is also desired.

### **b) Environmental Consequences**

#### *(1) Common to All Alternatives*

All of the alternatives will provide adequate road access for range management activities. If any new roads are needed, they will be analyzed as part of that individual project. It is anticipated that these roads, if any are needed, will be temporary (less than 1 year) in nature, open only for administrative access, and rehabilitated and reseeded when no longer needed.

#### *(2) No Action Alternative*

##### *(a) Direct Effects*

Under this alternative, there is a greater effect on cattle distribution, a reduction of available forage because of off road activities, and an increased potential of cattle loss from gates being left open. User conflicts between recreationists and cattle would be the greatest because of the extensive road and trail system.

As more recreation use occurs in the project area, the spread of noxious weeds is anticipated to increase. More of the area will become disturbed, inviting the establishment of noxious weeds. More dispersed camping with horse use will occur, primarily during the hunting season. Although, the Forest Service requires the use of weed-free hay, the potential still exists that this regulation is violated offering the exposure for noxious weeds to be introduced to these sites.

##### *(b) Indirect Effects*

Modifying the grazing season to the winter months in the Fourmile C&H allotment should have a temporary positive indirect effect in reducing the user conflicts with cattle use. Cattle will be on the Forest during the “low” recreation season.

##### *(c) Cumulative Effects*

There are no known cumulative effects of the travel management plan on livestock grazing. However, cumulatively, these two activities can affect other resources such as soils, riparian, and watersheds.

### *(3) Proposed Action Alternative*

#### *(a) Direct Effects*

The reduction in roads would have a positive effect on the conflicts associated with recreation use and cattle grazing. This should allow for better distribution of cattle across the allotments and lessen the opportunities for gates and fences being left open. The pasture rotation system would be better managed and enforced.

With better management of the roads and trails in the project area through this alternative and with the reduction in the miles of roads, the potential for noxious weeds to spread in the project area would be reduced.

#### *(b) Indirect Effects*

The effects will be the same as the No Action Alternative, except that with fewer roads and trails the positive effects will be greater.

#### *(c) Cumulative Effects*

There are no known cumulative effects of the travel management plan on livestock grazing. However, cumulatively, these two activities can affect other resources such as soils, riparian, and watersheds.

### *(4) Alternative C*

#### *(a) Direct Effects*

As stated in the No Action Alternative, the reduction of travel routes will have a positive effect on conflicts associated with recreation use and cattle grazing. Since this alternative has the fewest roads and trails, the conflicts will be the least.

#### *(b) Indirect Effects*

The effects will be the same as the No Action Alternative, except that with fewer roads and trails the positive effects will be greater.

#### *(c) Cumulative Effects*

There are no known cumulative effects of the travel management plan on livestock grazing. However, cumulatively, these two activities can affect other resources such as soils, riparian, and watersheds.

## **E. Economic and Social**

## **1. Transportation System**

### **a) Affected Environment**

The existing transportation system has several problems such as parallel or duplicate roads, excessive road densities, roads in natural drainage areas, ruts, erosion and other drainage related problems. Conflicting uses of the routes, access to non-motorized areas, as well as damage to the natural resources are severely affecting the area.

Current funding allows for maintaining approximately 40 percent of the roads to planned service levels nationwide, with the remainder of the roads maintained according to priority safety and environmental needs. Under this funding, the roads are degrading to levels lower than what was intended.

The BLM transportation system is made up of county roads, BLM roads, and roads constructed and maintained by and for a private entity. Planning criteria for transportation maintenance include 1) need for the route, 2) amount of use 3) present or likelihood of deterioration, 4) resource conflicts/risk of unnecessary or undue degradation of the environment (BLM RMP 2-66). Most of the roads on BLM managed lands in the project area are county roads that have been authorized through rights-of-way.

Approximately one fourth of all Forest Service system roads in the Fourmile area are maintained for passenger cars, and are usually well maintained, graded natural surfaces. Other roads are administrative and public use roads maintained for pickup trucks and other high-clearance vehicles. Surface conditions on these roads are not favorable for passenger cars. Some roads are physically closed to motor vehicle use, but are not rehabilitated to allow for management access. Management access needs may include fire protection, inventory and monitoring, wildlife habitat improvement, and vegetative treatments.

Many temporary access routes associated with fire suppression, timber harvest, and mineral exploration were never effectively closed. There were many routes created by users for a one-time experience. Increased public use has widened some roads and created additional roads. Most of these roads are poorly located and/or not maintained and were not intended for long-term vehicle use.

The Roads Analysis document (USDA Forest Service, 1999, pg. v) recommends balancing between the benefits of access and the road-associated effects on naturalness. The proper balance will result in a more efficient road system with less risk to the environment and public safety than currently exists.

Many roads on the National Forest and BLM do not meet current standards for environmental protection. Many of these system roads have not been properly maintained for a variety of reasons. Early settlers crudely pioneered some roads. Others were planned for temporary access but never closed. Still others evolved from tracks made by off-road vehicles. Due to their

haphazard nature, user created roads have far more negative impacts on the environment than do permanent, properly planned forest roads that are well engineered and maintained.

#### Desired Future Condition

Provide needed access while maintaining public safety, and the quality and quantity of recreation opportunities. Maintain and reconstruct needed routes, decommission unneeded routes, reverse the resource impacts caused by unrestricted off-route vehicular use, help restore the ecosystem to a healthy balanced state, increase the signing, and regulation enforcement.

### **b) Environmental Consequences**

#### *(1) Effects Common To All Alternatives*

##### *(a) Direct Effects*

The effects on the landscape of constructing new roads, deferring maintenance, and decommissioning old roads are well documented. Poorly designed or maintained roads promote erosion and landslide, degrading riparian and wetland habitat through sedimentation and changes in stream flow and water temperature, with associated reductions in fish habitat and productivity.

New road construction, which includes realigning of existing routes, will have a short-term impact on resources, including soils and watersheds, as new soil is being exposed and may erode during construction. These newly designed roads should incorporate all best management practices, and over the long-term provide a more stable, less damaging access for management and recreation.

Roads that are not properly maintained can channel water down rutted surfaces, which erodes the road surface, causes soil loss, and moves water away from riparian areas and streams. This can also cause users to create new routes around these areas. Proper maintenance, rerouting roads, and seasonal closures can help limit these concerns.

#### *(2) No Action Alternative*

##### *(a) Direct Effects*

The highest number of roads and trails and associated maintenance costs would be greatest in this alternative. Adopted user created routes in poor locations would need additional levels of maintenance and mitigation, such as longer seasonal closures for those in wet areas. Increases in user conflicts can be expected.

##### *(b) Indirect Effects*

This alternative adopts the existing roads and trails; however additional user created routes would still be a problem, because of the lack of public education, law enforcement, and

inconsistent signing. This would lead to increased user conflicts, resource damage, and increased cost associated with a continually growing, uncontrolled network of roads and trails.

Adding access affects natural resources such as high elevation ecosystems that are slow to recover from damage. Increased uncontrolled access can allow people to travel into previously not accessed areas, resulting in indirect impacts such as ground and habitat disturbance, increased pressure on wildlife species, increased litter, sanitation needs, vandalism, and increased frequency of human-caused fires.

#### (c) Cumulative Effects

Under current management, roads will continue to deteriorate, conflicts among users will increase, resource damage could be accelerated, and the public will continue to be confused by agency inconsistencies.

### (3) *Proposed Action Alternative*

#### (a) Direct Effects

Road maintenance costs would temporarily increase through the decommissioning of roads, installation of gates and barriers, reconstruction of roads and trails, and bringing signing up to standards in the short term. The public would benefit by having a better system of roads and trails that provides reasonable access for all types of activities. User conflicts are likely to decrease, because of consistent signing, better maintenance, and increased education. It is anticipated that fewer law enforcement problems and new user created routes will occur because the local community was closely involved in the development of this alternative.

#### (b) Indirect Effects

A road and trail maintenance plan would be developed and implemented. The long-term maintenance costs would be reduced once the system is brought up to standard. The elimination of high cost stream crossings, relocation of certain roads and trails, greater public support for the travel system and a reduced number of routes would allow maintenance dollars to go further.

#### (c) Cumulative Effects

Implementing this alternative may displace users that prefer to ride off designated routes to other areas. This may impact public and private lands immediately adjacent to the project area. Conflicts would be lessened between motorized and non-motorized users, such as hiking, mountain biking, and horseback riding. Implementing this action would improve the overall watershed conditions, based on what is currently known for other developments immediately adjacent to the project area.

### (4) *Alternative C*

(a) Direct Effects

Under this alternative the transportation system would be reduced by the greatest number of miles, road and trail decommissioning would be the greatest, signing and maintenance of the system would cost the least, and the least amount of reasonable access and types of use would be provided.

Safety concerns would increase by concentrating all uses on a limited number of routes. Greater agency presence would be needed to ensure compliance with rules and regulations.

The effects of limiting motor vehicle use are a reduction in road maintenance costs, minimal future reconstruction costs, additional opportunities for non-motorized recreation activities, minimal future environmental impacts from reconstruction and protection of wildlife habitat.

(b) Indirect Effects

Long-term route maintenance would be the least expensive. The least amount of resource degradation would occur because of the smaller system of routes. Increased competition for the use of existing routes would be greatest. User expectations would not be met in all areas, and explanation through signing, interpretation, and visitor contacts may be necessary. Interpretation and enforcement would be needed to eliminate or reduce noncompliance with travel regulations. More temporary roads would be needed to conduct other management activities such as prescribe burns and timber harvests.

(c) Cumulative Effects

Limiting road networks reduces the potential for erosion, maintains surface soil layers in a stable or protected state, and decreases the potential for erosion and deposition in area streams and reservoirs. Planned road networks may reduce overland flow thereby avoiding artificial flow networks that may be even more erosive. Proper maintenance of authorized roads and rehabilitation of closed roads, including drainage systems, is key to limiting impacts from roads on wildlife, riparian areas, streams, and watersheds.

(d) Comparison of Alternatives

Table 17 - Fourmile Travel Routes Comparison by Alternatives

	No Action	Proposed Action	Alternative C
<b>Forest Service</b>			
Roads Open	169.4	109.1	86.5
Roads Closed	0	42.5	76.9
Open ATV Trail	13.4	18.8	2.11
Open Single Track	7.3	5	0

Closed ATV	0	9.9	13.4
Closed Single Track	.25	1.4	6.1
Closed Trails	0	.16	.16
Previously Closed Roads	49.3	44.5	45.1
<b>BLM</b>			
Roads Open	38.2	23.5	16.1
Roads Closed	0	16.8	24.5
Open ATV Trails	1.3	0	0
Open Single Track	12.4	3.5	0
Open Trail	3.1	17.3	18.6
Closed ATV	0	1.3	1.3
Closed Single Track	0	7.2	9.1
Closed Trail	.62	1.4	1.4
Previously Closed Roads	15.4	3	3.84

Table 18 – Fourmile Travel Routes Cost Estimate for Each Alternative.

<b>ROADS (system and non-system)</b>									
	NO ACTION			PROPOSED ACTION			ALTERNATIVE C		
	Routes (mi)	Rate \$/mile	Total Cost*	Routes (mi)	Rate \$/mile	Total Cost*	Routes (mi)	Rate \$/mile	Total Cost*
Roads									
Road closure-miles	0			59			97		
Road closure - #gates (1/rd)	0	0	\$0	29	\$1,500	\$43,500	42	\$1,500	\$63,000
Reconstruction (miles)	-			23.4	\$7,500	\$175,000	4.72	\$7,500	\$35,400
Obliterate (miles)	-			30	\$3,000	\$90,000	55	\$3,000	\$165,000
Maintenance Level 2 Road	107.86	\$250	\$26,965	72.62	\$250	\$18,155	71.6	\$250	\$17,910
Maintenance Level 3 Road	130.21	\$300	\$39,063	57.59	\$300	\$17,277	29.3	\$300	\$8,778
System Roads	238.07			130.21			100.9		
<b>Road Total Cost</b>			\$66,028			\$344,432			\$290,088
<b>PROPOSED WORK ATV, Single track, and trail routes</b>									
	NO ACTION			PROPOSED ACTION			ALTERNATIVE C		
	Routes (mi)	Rate \$/mile	Total Cost*	Routes (mi)	Rate \$/mile	Total Cost*	Routes (mi)	Rate \$/mile	Total Cost*
ATV									
Close Obliterate	0		\$0	11.2	\$1,500	\$16,800	14.7	\$1,500	\$22,050
Open System	14.7	\$300	\$4,410				2.11	\$300	\$633
Open Reconstruct	-			18.8	\$3,000	\$56,400	0		
Single Track									
Close Obliterate	0			8.7	\$1,500	\$13,050	14	\$1,500	\$21,000
Open System	19.65	\$300	\$5,895						
Open Reconstruct	-			8.5	\$2,000	\$17,000			
Trail									
Close Obliterate	0			0.8	\$1,500	\$1,200	0.8	\$1,500	\$1,200
Open System	10.5	\$300	\$3,150	9.9	\$300	\$2,970	11.2	\$300	\$3,360
Open Reconstruct	-			24.1	\$3,000	\$72,300	24.5	\$3,000	\$73,500
<b>Trail Total Cost</b>			\$13,455			\$179,720			\$121,743
<b>Total Cost Estimate</b>			<b>\$79,483</b>			<b>\$524,152</b>			<b>\$411,831</b>

\* total cost is rounded to the nearest whole dollar

## 2. Social and Economic

### a) Affected Environment

The Fourmile area represents about one fifth of the public land acres in Chaffee County (85% public land and about 15% private land). Fourmile receives low use compared to the high mountain and lake public land areas to the west. It represents about 3% of the public recreational use occurring in Chaffee County. There are 47 private land parcels in the area. The local landowner interests vary from ranching, fuel wood gathering, road access to their private land, hunting, and many other forms of recreation. Most of local concerns relate to the creation and use of unauthorized routes on BLM and National Forest System lands, as well as noise, trespass, vandalism, and harassment from discourteous users.

Currently, and for the past 4 years, Chaffee County has had more controversy and polarized conflicts between motorized and non-motorized activities than the 16 other counties on the Pike and San Isabel National Forests.

## Desired Future Condition

The vision of the Fourmile Group is to “Create a travel management plan which provides access for responsible uses, reduces conflicts between users, private property owners and wildlife and improves public land health”. The desired future condition for the social environment is for motorized and non-motorized users to share the Fourmile area in a way that encourages cooperation and improves community spirit. The Fourmile area should be managed in an economically sustainable way that contributes to the health, stability, and diversity of the local economy.

## Key Issue, Objective or Meeting Forest Plan Standards (and Guidelines), and Applicable Law

The key social issue is conflicts between users. The main economic issue is the costs of reconstructing and maintaining roads and trails, relative to the value of the recreation experience. The objective is to designate a road and trail system that reduces conflicts between users, and is economically sustainable.

### **b) Environmental Consequences**

#### *(1) No Action Alternative*

##### *(a) Direct Effects*

The current number of routes and lack of management in Fourmile will provide for maximum use and access to all parts of the area.

##### *(b) Indirect Effects*

The current level of management will maintain confusion and conflicts between users.

##### *(c) Cumulative Effects*

When combined with other multiple-use actions such as vegetation management, prescribed fire, fire protection, mineral exploration, grazing, there could be even more routes, confusion, and conflicts in the area. Continued current management may give the public the impression that their behavior and/or use patterns are acceptable on federal lands. This may affect other public lands throughout the region.

#### *(2) Proposed Action Alternative*

##### *(a) Direct Effects*

The citizen’s participation in the development of this alternative addresses the public’s issues: reduced conflicts, diversity of recreation opportunities, and improved resources. Because of the diversity of users within the citizens group, this alternative has the highest potential for public

acceptance.

(b) Indirect Effects

The formation of the Friends of Fourmile volunteer organization would promote the interaction of the users groups to resolve future issues, assist in monitoring, education, and implementation of this alternative.

(c) Cumulative Effects

Management under this alternative would instill positive public land use ethics through education and other methods that would reverse the current trends of public behavior. This change in behavior could positively affect other public lands throughout the region.

The collaborative approach taken by the citizens group to address the issues should be used in the future when new issues arise. The model developed by the citizens to address issues in the Fourmile area could be used on other federal lands.

*(3) Alternative C*

(a) Direct Effects

All unauthorized roads, trails, and some system roads would be closed, reducing public access and motorized recreation opportunities in the Fourmile area. Motorized use affects will be concentrated into a smaller system of roads and trails.

(b) Indirect Effects

Motorized users may feel their increased needs were discounted, since their recreation opportunities were severely reduced. This may increase conflicts between users. Vandalism and off road and trail travel violations may increase, and route closure and rehabilitation efforts may fail. Economically, the cost of maintaining roads and trails would decrease, but the cost of rehabilitation and maintaining closures will increase.

(c) Cumulative Effects

When combined with other multiple-use actions there could be more dissatisfaction with agency management. Reduction in motorized use could put additional pressure on other federal lands. Local economics generated through tourism could be affected.

## **F. Effects Summary**

### **1. Irretrievable and Irreversible Commitment of Resources**

There are no known irretrievable and/or irreversible commitments of resources for this project.

## **2. Reasonable Foreseeable Future Actions**

These include the planned Bassam and Kaufman Ridge Fuel Treatments, and Fourmile Winter Grazing Study.

The proposed Kaufman Ridge Fuel Treatment project covers a gross planning acreage of approximately 15,000 acres. This is a gross planning acre and only a fraction of these projects will be burned or "turned black". The vegetation type of the burn on the shaded slopes is mainly Douglas fir/Mixed Conifer with aspen remnant and scattered grass and shrubs. Ponderosa pine is present on high-energy aspects. The project area is for the most part, even aged. There was a western budworm infestation in 1989-1991, leaving some of the Douglas fir dead. There is also some mountain pine beetle activity occurring presently in small pockets of the ponderosa pine. The proposed objectives of this project area are similar to the adjacent Bassam Park burn - to underburn the ponderosa where possible and reduce hazardous fuel loadings throughout the area by prescribed burns or mechanical treatments.

The Bassam Park Fuel Treatment area covers approximately 1500 acres. It is hoped that some burning may be done in the spring of 2002. The lower portion of this project will involve low intensity fire in the grass/forbs of Bassam Park primarily to improve range/wildlife habitat. Concern has been expressed to minimize impacts to the riparian areas of Cottonwood Creek and Castle Rock Gulch. These concerns will be mitigated in the Burn Plan.

The Fourmile Allotment Winter Grazing Study was started in the winter of 2001-2002, and will run for approximately three years. It is evaluating the effects of livestock grazing in the winter when recreation conflicts are reduced.

## **IV. List of Preparers**

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**Charlie Marsh, Mari Nakada**, Hydrology

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**Mark Roper, Geri Morris**, GIS

**Kevin Laves, Nancy Ryke**, Terrestrial Wildlife

**Steve Segin, Al Kane, Monica Weimer**, Cultural Resources

**Cindy Rivera**, Recreation

**Sam Schroeder**, Range, Timber

## **V. List of Agencies and Persons Consulted**

Colorado Division of Wildlife  
Colorado State Land Board  
Colorado State Forest Service  
Chaffee County Commissioners  
Chaffee County Sheriffs Department

## **VI. Glossary**

### **A**

**Affected Environment** – The physical, and human-related environment that is sensitive to changes resulting from the proposed actions.

**Airshed** – A geographic area that, due to topography, meteorology, and climate, shares the same air.

**Alternative** – A mix of management prescriptions applied to specific land areas to achieve a set of goals and objectives. The alternatives provide management direction for the proposed project that reflects identified public and management concerns for the Decision Area.

**Analysis Area** – The Analysis Area is the area that bounds the analysis for a particular resource and/or issue. It may be confused with the Project Area, which is the area within which the proposed activities are limited to.

### **B**

**Best Management Practices (BMPs)** – Practices determined by the State to be the most effective and practical means of preventing or reducing the amount of water pollution generated by non-point sources, to meet water quality goals.

**Big Game** – Those species of large mammals normally managed as a sport hunting resource.

**Biological Diversity (Biodiversity)** – The relative distribution and abundance of different plant and animal communities within an area.

**Biological Evaluation** – A documented Forest Service review of activities in sufficient detail determine how an action may affect any threatened, endangered, proposed or sensitive species.

### **C**

**Classified Road** – A road that is constructed or maintained for long-term highway vehicle use. Classified roads may be public, private or forest development.

Council on Environmental Quality (CEQ) – An advisory council to the President, established by NEPA. It reviews federal programs for their effect on the environment, conducts environmental studies and advises the President on environmental matters.

Cultural Resources – The remains of sites, structures, or objects used by humans in the past historic or prehistoric.

Cumulative Effect – The impact on the environment that results from the incremental impact of the action when added to other action. Cumulative impacts can also result from individually minor, but collectively significant, actions taking place over a period of time.

## **D**

Decision Area – The geographical area defining the scope of this document and the alternatives proposed by it.

Decommissioning – Some of the roads are discussed in terms of “decommissioning”. This term is used to refer to a specific type of road closure. On a decommissioned road, access would be controlled by means of a moderately sized berm or “tank trap” impassable to vehicles but capable of being easily bulldozed to permit vehicle passage if the road is reopened in the future. For all decommissioned roads, water bars are installed, the roadbed is seeded, all culverts are removed, and self-maintaining cross road drainage is provided.

Developed Recreation – Recreation dependent on facilities provided to enhance recreation opportunities in concentrated use areas. Examples are ski areas, resorts and campgrounds.

Dispersed Recreation - Recreation that occurs outside of developed recreation sites requiring few, if any, facilities, or other improvements and includes such activities as hunting, hiking, viewing scenery and cross-country skiing.

## **E**

Ecosystem – Any community of organisms along with its environment, forming an interacting system.

Effects (or impacts) – Environmental consequences (the scientific and analytical basis for comparison of alternatives) because of a proposed action. Effects may be either direct, which are caused by the action and occur at the same time and place, indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative.

Endangered Species – Any plant or animal species that is in danger of extinction throughout all, or a significant portion of its range (Endangered Species Act of 1973).

Environmental Assessment (EA) – A concise public document which serves to: a. briefly

provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of No Significant Impact; b. aid an agency's compliance with NEPA when no EIS is necessary.

Ephemeral Streams – Streams that flow only as a direct response to rainfall or snowmelt events. They have no base flow.

Erosion – The detachment and transport of individual soil particles by wind, water, or gravity.

## **F**

Fauna – Animals, including lesser forms such as insects, mites, etc.

Floodplain – The lowland and relatively flat areas adjoining inland and coastal waters, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Flora – Plants

Forage – All browse and non-woody plants that are available to livestock or game animals and used for grazing or harvested for feeding.

Forest Development Road – A road wholly or partially within or adjacent to a National Forest System boundary that is necessary for the protection, administration, and use of National Forest lands, which the Forest Service has authorized and over which the agency maintains jurisdiction.

## **G**

Graminoid – All grasses and grass-like plants, including sedges and rushes.

## **H**

Habitat – The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.

Habitat Type – An aggregation of all land areas potentially capable of producing similar plant communities at climax stage.

High Risk – Individual or groups of trees that are live (green) but have the physical characteristics favorable to insect infestation or disease infections. Trees in this category are subject to mortality and loss of economic value.

## **I**

Indicator Species – See Management Indicator Species.

Indirect Effects – Secondary effects which occur in locations other than the initial action or significantly later in time.

**Interdisciplinary (ID) Team** – A group of professional specialists with expertise in different resources that collaborate to develop and evaluate management alternatives.

**Intermittent Streams** – A stream that runs water in most months, but does not run water during the dry season of most years.

**Irretrievable** – Applies to losses of production, harvest, or a commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievable lost during a time an area is used as a winter sports (recreation) site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

**Irreversible** – Applies primarily to the use of nonrenewable resources, such as minerals, or cultural resources, or to those factors that are renewable only over long-time spans, such as soil productivity. Irreversible also includes loss of future options.

**Issue** – A subject of question of \_ public discussion of interest to be addressed or discussed in the planning process.

## **L**

**Land Allocation** – The assignment of a management emphasis to particular land areas with the purpose of achieving goals and objectives.

## **M**

**Management Area** – Geographic areas, not necessarily contiguous, which have common management direction, consistent with the Forest Plan allocations.

**Management Direction** – A statement of multiple use and other goals and objectives, along with the associated management prescriptions and standards and guidelines to direct resource management.

**Management Indicator Species** – A species selected because its welfare is presumed to be an indicator of the welfare of other species sharing similar habitat requirements. A species of fish, wildlife, or plants that reflect ecological changes caused by land management activities.

**Management Prescriptions** – A set of land and resource management policies that, as expressed through Standards and Guidelines, creates the Desired Future Condition over time.

**Mitigation** – Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impacts of a management practice.

**Mountain Pine Beetle** – The common name for the bark beetle (*Dendroctonus Ponderosae Hopkins*), which is the most destructive insect pest in the intermountain west.

## **N**

**National Environmental Policy Act (NEPA) Process** – An interdisciplinary process, which concentrates decision making around issues, concerns, alternatives, and the effects of alternatives on the environment.

**No Action Alternative** – The No Action Alternative is required by regulations implementing the National Environmental Policy Act (NEPA) (40 CFR 1502.14). The No Action Alternative provides a baseline for estimating the effects of other alternatives. When a project activity is being evaluated, the No Action Alternative is defined as one where current management direction would continue unchanged.

**Noxious Weed** – A plant species that is highly injurious or destructive and has a great potential for economic impact. A plant species that is listed as noxious by the State of Idaho.

## **O**

**Obliteration** – Obliteration of an existing road would involve, removal of all culverts, establishing permanent drainages and recontouring of the road surface.

**Open Road Density** – A standard set in the Forest Plan that is applied to most Management Areas important to big game. This road density standard of three-quarter of a mile of open road per square mile of habitat correlates directly to the elk habitat effectiveness of the area (i.e. 68 percent)

**Optimum Habitat** – The amount and arrangement of cover and forage that results in the greatest level of production that is consistent with other resource requirements.

## **P**

**Perennial Stream** – Streams that flow continuously throughout the year.

**Prescriptions** – Management practices selected and scheduled for application on a designated area to attain specific goals and objectives.

**Private Road** – A road under private ownership authorized by an easement to a private party, or a road which provides access pursuant to a reserved of private right.

**Public Road** – A road open to public travel that is under the jurisdiction of and maintained by a public authority such as states, counties, and local communities.

## **R**

**Range of Alternatives** – An alternative is one way of managing the National Forest and BLM,

expressed as management emphasis leading to a unique set of goods and services being available to the public. A range of alternatives is several different ways of managing the lands, offering many different levels of goods and services.

**Recreation Opportunity Spectrum (ROS)** – A system for defining the types of outdoor recreation opportunities the public might desire and identifies that portion of the spectrum a given area might be able to provide. It is used for planning and managing the recreation resource and recognizes recreation activity, setting, and experience opportunities.

**Primitive (P)** – a natural environment of large size. Interaction between users is very low and evidence of other users is minimal. Motorized use within the area is not permitted.

**Semi-Primitive Non-Motorized (SPNM)** – A natural, or natural appearing, environment of moderate to large size. The concentration of users is low, but there is often evidence of other users. No roads are present.

**Semi-Primitive Motorized (SPM)** – A natural, or natural appearing, environment of moderate to large size. Interaction between users in this setting is low, but there is often evidence of other users. Local roads used for other resource management activities may be present.

**Roaded Natural (RN)** – A natural, or natural appearing, environment of moderate size with moderate evidence of the sights and sounds of humans. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate high, with evidence of other users prevalent. Motorized use is allowed.

**Rural (R)** – An area characterized by a substantially modified natural environment. The sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities for intensified motorized use and parking areas are available.

**Restricted Road** – A National Forest road or segment that is restricted from a certain type of use or all uses during a certain seasons of the year or yearlong. The use being restricted and the time period must be specified. The closure is legal when the Forest Supervisor has issued and posted an order in accordance with 36 CFR 261.

**Riparian** – Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Streamsides, lake borders, or marshes are typical riparian areas. Vegetation bordering watercourses, lakes or swamps; it requires a high water table.

**Road** – A vehicle travel way of over 50 inches.

**Road Maintenance** – The upkeep of the entire Transportation System including surface and

shoulders, parking and side areas, structures and such traffic control devices as are necessary for its safe and efficient utilization.

Roadless Area – A National Forest-system area which is larger than 5,000 acres or, if smaller than 5,000 acres, is contiguous to a designated Wilderness or primitive area; contains no roads, and has been inventoried by the Forest Service for possible inclusion into the wilderness preservation system.

Route – a road and/or a trail – often used as a collective term for both roads and trails.

## S

Scoping – The procedures by which the agencies determines the extent of analysis necessary for a proposed action, i.e. the range of actions, alternatives, and impacts to be addressed, identification of significant issues related to a proposed action, and establishing the depth of environmental analysis, data, and task assignment.

Sediment – Any material carried in suspension by water, which will ultimately settle to the bottom. Sediment has two main sources; from the channel itself, and from upslope areas.

Sensitive Species – Those species identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trends in population numbers or density, or habitat capability that would reduce a species' existing distribution.

Seral – A biotic community that is in a development, transitory stage in ecological succession.

Special Use Permit (FS)/Special Recreation Permit (BLM) – A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of NFS and BLM land for some special purpose.

Succession – The progressive changes in plant communities toward climax habitat.

## T

Temporary Road –A subset of a road, a temporary road is authorized by contract, permit, lease, other written authorization or emergency operation, not intended to be part of the Forest transportation system and not necessarily for long-term resource management

Threatened Species – Any species of plant or animal that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Trail – A travel way, either motorized or nonmotorized, less than 50 inches.

Travel way – Any established tread that allows the passage of a user. This could range from a

road to a trail.\_ This does not include such things as game or cattle trails.

## U

**Unclassified Road** – A road that is not constructed, maintained, or intended for long-term highway use, such as, roads constructed for temporary access and other remnants of short-term use roads associated with fire suppression, timber harvest, and oil, gas, or mineral activities, as well as travel ways resulting from off-road vehicle use.

**Unroaded Area** – An area that does not contain classified roads.

## W

**Water Yield** – The measured output of the Forest's streams.

**Watershed** – Entire area that contributes water to a drainage system or stream.

**Watershed Classes (IWWI)**

**Class I (Pristine)** – Areas where current and past management activities have not significantly affected the function of stream and riparian areas. These watersheds are relatively pristine and form the basis from which comparisons to impacted stream and riparian systems could be made.

**Class II (Limited)** – Areas where there are currently management activities occurring, and are not in a pristine condition. Influences on sediment transport, hydrologic function, and biological communities are present, and are moderately impacted.

**Class III (degraded)** – Areas where major impacts to the land have resulted in severe damage to stream and riparian function. In many cases, these areas have been identified by the Colorado Department of Health or other agencies as being seriously degraded directly by management activities.

**Wetlands** – Areas that are inundated by surface or ground water with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, wet meadows, river overflows, mud flats, and natural ponds.

**Wilderness** – All lands included in the National Wilderness Preservation System by public law; generally defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation.

**Wilderness Study Area** – A roadless area or island that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

Wildfire – Any wildfire not designated and managed as a prescribed fire with an approved prescription.

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## **VIII. Appendix A – Forest Plan and Resource Management Plan Standards and Guidelines**

Forest Service

Forest Plan

General Direction Statements specify the actions, measures, or treatments (management practices) to be done when implementing the management activity or the condition expected to exist after the general direction is implemented. Standards and Guidelines are quantifications of the acceptable limits.

**General Direction, Standards and Guidelines for all prescriptions**

**Forest Wide Direction**

Provide for the habitat needs of management indicator species on the National Forest (General Direction (GD))

Bighorn sheep.\_ Protect lambing concentration areas from disturbance April 1 - June 15, annually.\_ Protect lambing areas from habitat modification. (Standard and Guideline (SG))

Provide a broad spectrum of dispersed recreation opportunities in accordance with the established Recreation Opportunity Spectrum (ROS) classification for the management area.\_ (GD)

Design and implement activities in management areas to protect and manage the riparian ecosystem.\_ (GD)

Locate and construct arterial and collector roads to maintain the basic natural condition and character of riparian areas.\_ (GD)

Rehabilitate disturbed areas contributing sediment directly to perennial streams because of management activities to maintain water quality and re-establish vegetation cover.\_ (GD)

Maintain soil productivity, minimize man-caused soil erosion, and maintain integrity of associated ecosystems.\_ (GD)

Elk and Mule Deer.\_ Protect calving and fawning concentration areas from habitat modification and disturbance from May 15 - June 30.\_ (SG)

Maintain habitat capability and effectiveness at levels prescribed by management area.\_ (GD)

Maintain habitat for viable populations of all existing vertebrate wildlife species.\_ (GD)  
Habitat for each species on the forest will be maintained at least at 40 percent or more of potential (Standard and Guideline (SG))

Manage waters capable of supporting self-sustaining trout populations to provide for those populations (GD)

Manage fish habitat that is providing a fishery at or near its potential, to maintain fish populations at existing levels.\_ Manage fish habitat which is determined to be limiting a fish population to a level below its potential, to improve habitat conditions which may be limiting\_ (GD)

Identify at the project level upland areas that are immediately adjacent to Riparian (Prescription 9A) Management Areas.\_ Recognize that the magnitude of effects on these areas is dependant upon slope steepness, and the kind, amount and location of surface vegetation disturbance within the adjacent upland unit.\_ (GD)

Close all newly constructed roads to public motorized use unless documented analysis shows:

- a)\_\_\_\_\_Use does not adversely impact other resources
- b)\_\_\_\_\_Use is compatible with the ROS class established for the area

- c) \_\_\_\_ They are located in areas open to motorized use
- d) \_\_\_\_ They provide user safety
- e) \_\_\_\_ They serve an identified public need
- f) \_\_\_\_ The area accessed can be adequately managed
- g) \_\_\_\_ Financing is available for maintenance or cooperative maintenance can be arranged \_  
(GD)

Manage road use by seasonal closure if:

- a) \_\_\_\_ Use causes unacceptable damage to soil and water resources due to weather or seasonal conditions
- b) \_\_\_\_ Use conflicts with the ROS class established for the area
- c) \_\_\_\_ Use causes unacceptable wildlife conflict or habitat degradation
- d) \_\_\_\_ Use results in unsafe conditions due to weather conditions
- e) \_\_\_\_ They serve a seasonal public or administration need
- f) \_\_\_\_ Area accessed has seasonal need for protection or nonuse \_ (GD)

Keep existing roads open to public motorized use unless:

- a) \_\_\_\_ Financing is not available to maintain the facility or manage the associated use of adjacent lands
- b) \_\_\_\_ Use causes unacceptable damage to soil and water resources
- c) \_\_\_\_ Use conflicts with the ROS class established for the area
- d) \_\_\_\_ They are located in areas closed to motorized use and are not “designated routes” in the Forest travel management direction.
- e) \_\_\_\_ Use results in unsafe conditions unrelated to weather conditions
- f) \_\_\_\_ There is little or no public need for them
- g) \_\_\_\_ Use conflicts with wildlife management objectives \_ (GD)

Provide a full range of trail opportunities in coordination with other Federal, State, and municipal jurisdictions and private industries both on and off NFS lands. \_ (GD)

Construct or reconstruct trails when needed as part of the transportation system. \_ (GD)

Acquire rights of way on existing Forest System Roads and Trails that cross private land (GD).

Limit intensive soil disturbing activities on unstable slopes and highly erosive sites. \_ (SG)

Provide adequate road and trail cross drainage to reduce sediment transport energy. \_ (GD)

Install permanent drainages and establish protective vegetative cover on...all roads removed from the transportation system. \_ (GD)

Restore disturbance caused by human use to soil loss tolerance levels commensurate with the natural ecological processes. \_ (GD)

**2B Prescription – Emphasis on roaded-natural recreation opportunities.**

Close road and trails to motorized travel when the surface would be damaged to the degree that resulting runoff into adjacent water bodies would exceed sediment yield threshold limits.\_ (GD)

Manage public use of roads with techniques such as seasonal closures, time of day closures, etc.\_ (GD)

Maintain existing motorized routes or construct new routes needed as part of the transportation system.\_ Develop loop routes and coordinate them to compliment semi-primitive motorized opportunities in adjacent semi-primitive motorized ROS class areas.\_ (GD)

Prohibit motorized vehicle use off Forest System roads and trails (except snowmobiles operating on snow) in other alpine, and other ecosystems, where needed to protect soils, vegetation, or special wildlife habitat.\_ (GD)

On all non forested areas, motorized trail and local road density is not to exceed 4 miles per square mile.\_ (SG)

#### **4B Prescription – Emphasize habitat for Management Indicator Species**

Manage for habitat needs of management indicator species.\_ (GD)

Maintain hiding cover for elk and deer, where present.\_ (GD)

Maintain along 75 percent of all arterial and collector road edges cover that hides 90 percent of an adult standing deer or elk from human view at a distance of 200 feet from the road.\_ (SG)

Prohibit motorized vehicle use off Forest System roads and trails (except snowmobiles operating on snow) in other alpine, and other ecosystems, where needed to protect soils, vegetation, or special wildlife habitat.\_ (GD)

Manage road use to provide for habitat needs for management indicator species, including road closures and area closures, and to maintain habitat effectiveness.\_ (GD)

#### **4D Prescription – Emphasis is on aspen management**

Prohibit development of new developed recreation sites.\_ (GD)

Prohibit motorized vehicle use off Forest System roads and trails (except snowmobiles operating on snow) in other alpine, and other ecosystems, where needed to protect soils, vegetation, or special wildlife habitat.\_ (GD)

Manage for habitat needs of management indicator species.\_ (GD)

Maintain big game hiding cover next to aspen viewing areas, and along the edge of arterial and

collector roads.\_ (SG)

**5B Prescription - Emphasize protection for big game winter range, including deer, elk, bighorn sheep, and mountain goats**

Close existing and new local roads to prevent stress on big game during primary use season; temporary roads & seasonal closures can be used

Manage winter use for very low or low densities.\_ Close areas to human use to the degree necessary in winter to prevent the disturbance of wildlife.\_ (GD)

Do not provide parking or trailhead facilities during winter.\_ (SG)

Manage for habitat needs of management indicator species.\_ (GD)

Maintain along 75 percent of all arterial and collector road edges cover that hides 90 percent of an adult standing deer or elk from human view at a distance of 200 feet from the road.\_ (SG)

Provide big game forage and cover and habitat.\_ (GD)

Allow new roads in the management area only if needed to meet priority goals outside the management area or to meet big game goals on the management area.\_ Obliterate temporary roads within one season after planned use ends.\_ (GD)

Close existing roads, prohibit off-road vehicle use and manage non-motorized use to prevent stress on big game animals.\_ (GD)

**6B Prescription – Emphasis is on livestock grazing.**

Maintain habitat capability for management indicator species.\_ (GD)

Prohibit motorized vehicle use off Forest System roads and trails (except snowmobiles operating on snow) in other alpine, and other ecosystems, where needed to protect soils, vegetation, or special wildlife habitat.\_ (GD)

**8B Prescription – Emphasis is on primitive wilderness opportunities.**

Restore soil disturbances caused by human use to soil loss tolerance levels commensurate with the natural ecological processes for the treatment area.\_ (GD)

Trail density will be less than 1 mile of trail per square mile.\_ (SG)

Construction and reconstruction of trails only when needed to meet objectives of the wilderness transportation system.\_ (GD)

## **9A Prescription – Emphasis is on riparian management.**

Prohibit motorized vehicle use off Forest System roads and trails (except snowmobiles operating on snow) in other alpine, and other ecosystems, where needed to protect soils, vegetation, or special wildlife habitat. \_ (GD)

Manage for habitat needs of management indicator species. \_ (GD)

Proposed new land use facilities (roads, campgrounds, buildings) will not normally be located within floodplain boundaries for the 100-year flood. \_ (GD)

Implement mitigation measures when present or unavoidable future facilities are located in the active floodplains to ensure that state water quality standards, sediment threshold limits, bank stability criteria, flood hazard reduction and instream flow standards are met during and immediately after construction. \_ (SG)

Maintain sediment yield within threshold limits. \_ (GD)

Prevent stream channel instability, loss of channel cross-sectional areas, and loss of water quality resulting from activities that alter vegetative cover. \_ (GD)

Treat disturbed areas resulting from management activities to reduce sediment yields to the natural erosion rates in the shortest possible time. \_ (GD)

Stabilize streambanks, which are damaged beyond natural recovery in reasonable time period with appropriate methods or procedures that emphasize control by vegetation. \_ (GD)

Require concurrent monitoring to ensure that mitigative measures are effective in compliance with state water quality standards. \_ (GD)

Limit changes in channel rating or classification scores to an increase of 10 percent or less. \_ (SG)  
Maintain at least 80 percent of potential ground cover within 100 feet from the edges of all perennial streams, lakes and other water bodies, or to the outer margin of the riparian ecosystem, where wider than 100 feet. \_ (SG)

Rehabilitate disturbed soils where aquatic and riparian ecosystems would be impacted. \_ (GD)

Prevent soil surface compaction and disturbance in riparian ecosystems. \_ Allow use of heavy construction equipment for construction, residual removal, etc., during periods when the soil is least susceptible to compaction or rutting. \_ (GD)

Maintain or enhance the long-term productivity of soils in the riparian ecosystem. \_ (GD)

Locate roads and trails outside of riparian areas unless alternative routes have been reviewed and rejected as more environmentally damaging. \_ (GD)

Do not parallel streams when road location must occur in riparian areas except where absolutely necessary. \_ Cross streams at right angles. \_ Locate crossings at points of low bank slope and firm surfaces. \_ (SG)

Create artificial sediment traps with barriers where natural vegetation is inadequate to protect the waterway or lake from accelerated sedimentation. \_ (GD)

Minimize detrimental disturbance to riparian area by construction activities. \_ Initiate timely and effective rehabilitation of disturbed areas and restore riparian areas so that a vegetation ground cover or suitable substitute protects the soil from erosion and prevents increased sediment yields.

Bureau of Land Management

BLM Standards for Public Land Health

**Standard 1:** Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, landform, and geologic processes. \_ Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

Indicators:

- \_\_\_\_\_ Expression of rills, soil pedestals is minimal.
- \_\_\_\_\_ Evidence of actively-eroding gullies (incised channels) is minimal.
- \_\_\_\_\_ Canopy and ground cover are appropriate.
- \_\_\_\_\_ There is litter accumulating in place and is not sorted by normal overland water flow.
- \_\_\_\_\_ There is appropriate organic matter in soil.
- \_\_\_\_\_ There is diversity of plant species with a variety of root depths.
- \_\_\_\_\_ Upland swales have vegetation cover or density greater than that of adjacent uplands.
- \_\_\_\_\_ There are vigorous, desirable plants.

**Standard 2:** Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Indicators:

- \_\_\_\_\_ Vegetation is dominated by an appropriate mix of native or desirable introduced species.
- \_\_\_\_\_ Vigorous, desirable plants are present.
- \_\_\_\_\_ There is vegetation with diverse age class structure, appropriate vertical structure,

and adequate composition, cover, and density.

- \_\_\_\_\_ Streambank vegetation is present and is comprised of species and communities that have root systems capable of withstanding high streamflow events.
- \_\_\_\_\_ Plant species present indicate maintenance of riparian moisture characteristics.
- \_\_\_\_\_ Stream is in balance with the water and sediment being supplied by the watershed (e.g., no headcutting, no excessive erosion or deposition).
- \_\_\_\_\_ Vegetation and free water indicate high water tables.
- \_\_\_\_\_ Vegetation colonizes point bars with a range of age classes and successional stages.
- \_\_\_\_\_ An active floodplain is present.
- \_\_\_\_\_ Residual floodplain vegetation is available to capture and retain sediment and dissipate flood energies.
- \_\_\_\_\_ Stream channels with size and meander pattern appropriate for the stream's position in the landscape, and parent materials.
- \_\_\_\_\_ Woody debris contributes to the character of the stream channel morphology.

**Standard 3:** Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

Indicators:

- \_\_\_\_\_ Noxious weeds and undesirable species are minimal in the overall plant community.
- \_\_\_\_\_ Native plant and animal communities are spatially distributed across the landscape with a density, composition, and frequency of species suitable to ensure reproductive capability and sustainability.
- \_\_\_\_\_ Plants and animals are present in mixed age classes sufficient to sustain recruitment and mortality fluctuations.
- \_\_\_\_\_ Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.
- \_\_\_\_\_ Photosynthetic activity is evident throughout the growing season.
- \_\_\_\_\_ Diversity and density of plant and animal species are in balance with habitat/landscape potential and exhibit resilience to human activities.
- \_\_\_\_\_ Appropriate plant litter accumulates and is evenly distributed across the landscape.
- \_\_\_\_\_ Landscapes composed of several plant communities that may be in a variety of successional stages and patterns.

**Standard 4:** Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Indicators:

- \_\_\_\_\_ All the indicators associated with the plant and animal communities standard apply.

- \_\_\_\_\_ There are stable and increasing populations of endemic and protected species in suitable habitat.
- \_\_\_\_\_ Suitable habitat is available for recovery of endemic and protected species.

**Standard 5:** The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

Indicators:

- \_\_\_\_\_ Appropriate populations of macroinvertebrates, vertebrates, and algae are present.
- \_\_\_\_\_ Surface and ground waters only contain substances (e.g. sediment, scum, floating debris, odor, heavy metal precipitates on channel substrate) attributable to humans within the amounts, concentrations, or combinations as directed by the Water Quality Standards established by the State of Colorado (5 CCR 1002-8).

## IX. \_\_\_\_\_ Appendix B – Watershed Conservation Practice Standards

Colorado Forest Stewardship Guidelines to Protect Water Quality - Best Management Practices for Colorado

Ephemeral areas drain water to intermittent stream channel, which carry the water to perennial streams, which flow to the watershed outlet. Sediment if fine particles of soil, sand and pebbles carried by moving water and later deposited when the flow slows or stops such as in eddies or where a stream enters a lake or pond. Any sediment created by soil erosion during...road building activities can be carried by way of ephemeral, intermittent and perennial stream channels to the watershed outlet.

Ephemeral areas generally occur above the upper reaches of intermittent streams. *Since they can direct water into intermittent stream channels, care should be taken to minimize disturbing in these areas.*

Watershed Conservation Practices

**11.1 – STANDARD (1). Manage land treatments to conserve site moisture and to protect long-term stream health from damage by increased runoff.**

Design criteria:

- \_\_\_\_\_ In each 3<sup>rd</sup>-order and larger watershed, limit connected disturbed areas so the total

stream network is not expanded by more than 10%. \_ Progress toward zero connected disturbed area as much as feasible. \_ Do not add connected disturbed area to Class III watersheds.

**11.2 – STANDARD (2). Manage land treatments to maintain enough organic ground cover in each land unit to prevent harmful increased runoff.**

Design criteria:

- a. \_\_\_\_\_ Maintain the organic ground cover of each land unit so that pedestals, rills, and surface runoff from the land unit are not increased.
- b. \_\_\_\_\_ Restore the organic ground cover of degraded land units within the next plan period, using certified local native plants as feasible; avoid persistent or invasive exotic plants.

**12.1 STANDARD (3). In the water influence zone next to perennial and intermittent streams, lakes and wetlands, allow only those actions that maintain or improve long-term stream health and riparian ecosystem condition.**

Design criteria:

- a. \_\_\_\_\_ Allow no action that will cause long-term change to a lower stream health class in any stream reach. \_ In degraded systems, progress toward robust stream health within the next plan period.
- b. \_\_\_\_\_ Allow no action that will cause long-term change away from desired condition in any riparian or wetland vegetation community. \_ In degraded systems, progress toward desired condition in the next plan period.
- c. \_\_\_\_\_ Locate new concentrated-use sites outside the Water Influence Zone (WIZ) if feasible and outside riparian areas and wetlands always. \_ Harden or reclaim existing sites in the WIZ to prevent detrimental soil and bank erosion.
- d. \_\_\_\_\_ Maintain the extent of stable banks in each stream reach at 80% or more of reference conditions. \_ As a general rule, stream banks can receive a maximum of 20-25% alteration and still maintain their integrity.
- e. \_\_\_\_\_ Adjust management in riparian areas and wetlands to remedy detrimental soil compaction whenever it occurs.

**12.2 STANDARD (4). Design and construct all stream crossings and other instream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life.**

Design criteria:

- a. \_\_\_\_\_ Install all stream crossings to meet Corps of Engineers and State permits, pass normal flows, and be hardened to withstand floods as follows:  
Design life (years): \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 5 \_\_\_\_\_ 10 \_\_\_\_\_ 20 \_\_\_\_\_ 50  
Design flood (years): \_\_\_\_\_ 10 \_\_\_\_\_ 10 \_\_\_\_\_ 25 \_\_\_\_\_ 50 \_\_\_\_\_ 100 \_\_\_\_\_ 200
- b. \_\_\_\_\_ Size culverts and bridges to pass debris. \_ Engineers work with hydrologists and aquatic

biologists on site design.

c. \_\_\_\_\_ Install stream crossings on straight and resilient stream reaches, as perpendicular to flow as feasible, and to provide passage of fish and other aquatic life.

d. \_\_\_\_\_ Install stream crossings to sustain bankfull dimensions of width, depth and slope and keep stream beds and banks resilient. \_ Favor hardened fords and bridges on streams with floodplains, and bottomless arches instead of pipe culverts.

**12.3 – STANDARD (5). Conduct actions so that stream pattern, geometry, and habitats are maintained or improved toward robust stream health.**

Design criteria:

a. \_\_\_\_\_ Add or remove rocks, wood, or other material in streams or lakes only if such action maintains or improves stream and lake health. \_ Leave rocks and portions of wood that are embedded in beds or banks to prevent channel scour.

**12.4 – STANDARD (6). Maintain long-term ground cover, soil structure, water budgets, and flow patterns of wetlands to sustain their ecological function, per 404 regulation.**

Design criteria:

a. \_\_\_\_\_ Keep ground vehicles out of wetlands unless protected by at least 1 foot of packed snow or 2 inches of frozen soil. \_ Do not disrupt water supply or drainage patterns into wetlands.

b. \_\_\_\_\_ When feasible, keep roads and trails out of wetlands. \_ If roads or trails must enter wetlands, use bridges or raised prisms with diffuse drainage to sustain flow patterns. \_ Set crossing bottoms at natural levels of channel beds and wet meadow surfaces. \_ Avoid actions that may dewater or reduce water budgets in wetlands.

c. \_\_\_\_\_ Avoid any long-term reduction in organic ground cover and organic soil layers in any wetland (including peat in fens).

e. \_\_\_\_ Avoid any loss of rare wetlands such as fens and springs.

**13.1 – STANDARD (9). Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography, and climate.**

Design criteria:

a. \_\_\_\_\_ Construct roads on ridge tops, stable upper slopes, or wide valley terraces if feasible. \_ Stabilize soils onsite. \_ End-haul soil if full-bench construction is used. \_ Avoid slopes steeper than 70%.

b. \_\_\_\_\_ Avoid soil-disturbing actions during periods of heavy rain or wet soils. \_ Apply travel restrictions to protect soil and water.

c. \_\_\_\_\_ Install cross drains to disperse runoff into filter strips and minimize connected disturbed areas. \_ Make cuts, fills and road surfaces strongly resistant to erosion between each stream crossing and at least the nearest cross drain. \_ Revegetate using certified local native plants as feasible; avoid persistent or invasive exotic plants.

- d. \_\_\_\_\_ Where feasible, construct roads with rolling grades instead of ditches and culverts.
- e. \_\_\_\_\_ Retain stabilizing vegetation on unstable soils. \_ Avoid new roads or heavy equipment use on unstable or highly erodible soils.
- f. \_\_\_\_\_ Use existing roads unless other options will produce less long-term sediment. \_ Reconstruct for long-term soils and drainage stability.
- h. \_\_\_\_\_ Designate, construct and maintain recreational travelways for proper drainage and harden their stream crossings as needed to control sediment.

**13.2 – STANDARD (10). Construct roads and other disturbed sites to minimize sediment discharge into streams, lakes and wetlands.**

Design criteria:

- a. \_\_\_\_\_ Design all roads, trails and other soil disturbances to the minimum standard for their use and to “roll” with the terrain as feasible.
- b. \_\_\_\_\_ Use filter strips, and sediment traps if needed, to keep all sand-sized sediment on the land and disconnect disturbed soil from streams, lakes, and wetlands. \_ Disperse runoff into filter strips.
- c. \_\_\_\_\_ Key sediment traps into the ground. \_ Clean them out when 80% full. \_ Remove sediment to a stable, gentle upland site and revegetate.
- d. \_\_\_\_\_ Keep heavy equipment out of filter strips except to do restoration work or build hardened stream or lake approaches. \_ Yard logs up out of each filter strip with minimum disturbance of ground cover.
- e. \_\_\_\_\_ Design road ditches and cross drains to limit flow to ditch capacity and prevent ditch erosion and failure.

**13.3 – STANDARD (11). Stabilize and maintain roads and other disturbed sites during and after construction to control erosion.**

Design criteria:

- a. \_\_\_\_\_ Do not encroach fills or introduce soil into streams, swales, lakes or wetlands.
- b. \_\_\_\_\_ Revegetate cuts and fills upon final shaping to restore ground cover, using certified local native plants as feasible; avoid persistent or invasive exotic plants. \_ Provide sediment control until erosion control is permanent.
- c. \_\_\_\_\_ Do not disturb ditches during maintenance unless needed to restore drainage capacity or repair damage. \_ Do not undercut the cut slope.
- d. \_\_\_\_\_ Space cross drains, from no more than 120 feet in highly erodible soils on steep grades, to no more than 1,000 feet in resistant soils on flat grades (ex. 01). \_ Do not divert water from one stream to another.
- e. \_\_\_\_\_ Empty cross drains onto stable slopes that disperse runoff into filter strips. \_ On soils that may gully, armor outlets to disperse runoff. \_ Tighten cross-drain spacing so gullies are not created.
- f. \_\_\_\_\_ Harden rolling dips as needed to prevent rutting damage to the function of the rolling

dips. \_ Ensure that road maintenance provides stable surfaces and drainage.

g. \_ Where berms must be used, construct and maintain them to protect the road surface, drainage features, and slope integrity while also providing user safety.

h. \_ Build firelines with rolling grades and minimum downhill convergence. \_ Outslope or backblade, permanently drain, and revegetate firelines immediately after the burn. \_ Use certified local native plants as feasible; avoid persistent or invasive exotic plants.

**Maximum Cross-Drain Spacing in Feet Based on Soil Types**

Road Grade %	ML, SM Extr. Erodible Silts-sands w/ Little or no binder (d.g.)	MH, SC, CL Highly Erodible Silts-sands with moderate binder	SW, SP, GM, GC Mod. Erodible Gravels + fines & sands with little or no fines	GW, GP Low Erodible Gravels with little or no fines
1-3	600	1000	1000	1000
4-6	300	540	680	1000
7-9	200	360	450	670
10-12	150	270	340	510
13-15	120	220	270	410

**13.4 – STANDARD (12). Reclaim roads and other disturbed sites when use ends, as needed, to prevent resource damage.**

Design criteria:

a. \_ Site-prepare, drain, revegetate, and close temporary and intermittent use roads and other disturbed sites within one year after use ends. \_ Provide stable drainage that disperses runoff into filter strips and maintains stable fills. \_ Do this work concurrently. \_ Use certified local native plants as feasible; avoid persistent or invasive exotic plants.

b. \_ Remove all temporary stream crossings (including all fill material in the active channel), restore the channel geometry, and revegetate the channel banks using certified local native plants as feasible; avoid persistent or invasive exotic plants.

**14.1 – STANDARD (13). Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to no more than 15 % of any land unit.**

**15.1 – STANDARD (15). Place new sources of chemical and pathogenic pollutants where such pollutants will not reach surface or ground water.**

Design criteria:

a. \_\_\_\_\_ Put vehicle service and fuel areas, chemical storage and use areas, and waste dumps and areas on gentle upland sites. Do mixing, loading and cleaning on gentle upland sites. Dispose of chemicals and containers in State-certified disposal areas.

## X. Appendix C - Threatened, Endangered, Proposed, Management Indicator, And Sensitive Species

Table C - 1. \_\_\_\_\_ Federally listed (threatened, endangered, or proposed) species for Chaffee County.

Scientific Name	Common Name	Federal Status	Potential to Occur in Project Area
Plants			
No Listed Plants			
Amphibians			
No Listed Amphibians			
Birds			
Haliaetus Leucocephalus	Bald Eagle	Threatened	Yes
Mammals			
Felis lynx canadensis	Canada Lynx	Threatened	Yes
Invertebrates			
Bolria acrocneuma	Uncompahgre Fritillary Butterfly	Endangered	
Fish			
No Listed Fish			

Table C - 2. \_\_\_\_\_ Forest Service and Bureau of Land Management Sensitive Species with the potential to occur on the Leadville or Salida Ranger Districts.

Species Scientific Name	Species Common Name	FS	BLM	Project Area
Plants				

<i>Adiantum capillus-veneris</i>	southern maiden-hair fern	Yes		
<i>Ambrosia linearis</i>	plains ragweed	Yes		
<i>Armeria maritima</i>	sea pink	Yes		
<i>Asclepias uncialis</i>	dwarf milkweed	Yes		
<i>Astragalus molybdenus</i>	molybdenum milk-vetch	Yes		
<i>Botrychium echo</i>	reflected moonwort	Yes		Yes
<i>Botrychium lineare</i>	narrow-leaved moonwort	Yes		Yes
<i>Botrychium pallidum</i>	pale moonwort	Yes		Yes
<i>Braya glabella</i>	smooth rockcress	Yes		
<i>Carex livida</i>	livid sedge	Yes	Yes	Yes
<i>Chenopodium cycloids</i>	sandhill goosefoot	Yes		
<i>Draba smithii</i>	Smith's whitlow grass	Yes		Yes
<i>Epipactis gigantea</i>	giant helleborine	Yes		
<i>Eriogonum brandegei</i>	Brandegee's wild buckwheat	Yes	Yes	
<i>Eriophorum altaicum</i>	Altai cottongrass	Yes		
<i>Festuca hallii</i>	Hall fescue	Yes		
<i>Frasera coloradoensis</i>	Colorado gentian	Yes		
<i>Ipomopsis globularis</i>	globe gilia	Yes		
<i>Machaeranthera coloradoensis</i>	Colorado tansy-aster	Yes		Yes
<i>Malaxis brachypoda</i>	white adder's mouth orchid	Yes		
<i>Mimulus gemmiparus</i>	Weber's monkey flower	Yes		Yes
<i>Muhlenbergia glomerata</i>	marsh muhly	Yes		
<i>Neoparrya lithophila</i>	rock-loving aletes	Yes		Yes
<i>Penstemon degeneri</i>	Degener's penstemon	Yes		Yes
<i>Potentilla rupincola</i>	Rocky Mountain cinquefoil	Yes		Yes
<i>Primula egaliksensis</i>	Greenland primrose	Yes	Yes	
Species Scientific Name	Species Common Name	FS	BLM	Project Area
<i>Ptilagrostis monopholica</i>	Colorado false needle grass	Yes	Yes	Yes
<i>Rubus articus</i>	northern blackberry	Yes		
<i>Salix lanata</i>	wooly willow	Yes		Yes

Salix myrtillofolia	myrtle-leaf willow	Yes	Yes	Yes
Scirpus rollandii	Rolland's bullrush	Yes	Yes	
Viola selkirkii	great-spurred violet	Yes		
Amphibians and Reptiles				
Ambystoma tigrinum	tiger salamander	Yes		Yes
Bufo boreas boreas	boreal toad	Yes		Yes
Rana pipens	northern leopard frog	Yes	Yes	Yes
Birds				
Accipiter gentilis	northern goshawk	Yes	Yes	Yes
Aegolius funereus	boreal owl	Yes		Yes
Contopus borealis	olive-sided flycatcher	Yes		Yes
Cypseloides niger	black swift	Yes		
Falco peregrinus	peregrine falcon	Yes		Yes
Gavia immer	common loon	Yes		
Lanius ludovicianus	loggerhead shrike	Yes		Yes
Melanerpes lewis	Lewis's woodpecker	Yes		Yes
Otus flammeolus	flamulated owl	Yes		Yes
Pandion haliaetus	osprey	Yes		
Passerella iliaca	fox sparrow	Yes		Yes
Picoides tridactylus	three-toed woodpecker	Yes		Yes
Plegadis chihi	white-faced ibis	Yes	Yes	Yes
Progne subis	purple martin	Yes		Yes
Regulus satrapa	golden-crowned kinglet	Yes		Yes
Sitta pygmaea	pygmy nuthatch	Yes		Yes
Mammals				
Bassariscus astutus	ringtail	Yes		Yes
Gulo gulo luscus	North American wolverine	Yes		Yes
Species Scientific Name	Species Common Name	FS	BLM	Project Area
Martes americana	American marten	Yes		Yes
Plecotus townsendii	Townsend's big-eared bat	Yes	Yes	Yes

Sorex nanus	dwarf shrew	Yes		Yes
Myotis thysanodes	fringed myotis	Yes	Yes	
Myotis yumanensis	Yuma myotis		Yes	
Nyctinomops macrotis	big free-tailed bat		Yes	
Invertebrates				
Ferrissia fragilis	Rocky Mountain capshell snail	Yes		
Fish				
No sensitive fish				

Table C - 3. \_\_Management Indicator Species with the potential to occur on the Leadville or Salida Ranger Districts.

Scientific Name	Common Name	Selected as MIS for this Project
Plants		
No MIS Plants		
Amphibians		
No MIS Amphibians		
Birds		
<i>Sialia currucoides</i>	mountain bluebird	
<i>Falco peregrinus</i>	peregrine falcon	
<i>Anas platyrhynchos</i>	mallard	
<i>Sphyrapicus varius</i>	yellow-bellied sapsucker	
<i>Pipilo chlorurus</i>	green-tailed towhee	
<i>Meleagris gallopavo</i>	turkey	
<i>Melanerpes lewis</i>	Lewis' woodpecker	
<i>Picoides tridactylus</i>	northern three-toed woodpecker	
<i>Dendroica nigrescens</i>	black-throated gray warbler	
<i>Vermivora virginiae</i>	Virginia's warbler	
<i>Wilsonia pusilla</i>	Wilson's warbler	
Mammals		
<i>Castor canadensis</i>	beaver	
<i>Ovis canadensis</i>	bighorn sheep	Yes
<i>Odocoileus hemionus</i>	mule deer	Yes
<i>Cervus canadensis</i>	elk	Yes
<i>Martes americana</i>	pine marten	
<i>Sciurus aberti</i>	Abert's squirrel	
Invertebrates		
No MIS Invertebrates		
Fish		
<i>Salvelinus fontinalis</i>	brook trout	

## **XI. \_\_\_\_\_ Appendix D – Road Best Management Practices**

In addition to Forest Plan Standards and Guidelines for travel management, implementing the **Watershed Conservation Practice Standards** and reinforcing the Objectives of the **Forest Service Manual (FSM) 7700** are additional ways to meet the desired future conditions.

### Objectives of the FSM 7700

1. \_\_\_\_\_ To provide sustainable access in a fiscally responsible manner to National Forest System lands for administration, protection, and utilization of these lands and resources consistent with Forest Plan guidance.
2. \_\_\_\_\_ To manage a forest transportation system in the environmental capabilities of the land.
3. \_\_\_\_\_ To manage forest transportation system facilities to provide user safety, convenience, and efficiency of operations in an environmentally responsible manner and to achieve road related ecosystem restoration in the limits of current and likely funding levels.
4. \_\_\_\_\_ To coordinate access to National Forest System lands with national, regional, Statewide, local and Tribal government transportation needs.

In addition, the following are compiled practices for the following activities:

### Road Maintenance

1. \_\_\_\_\_ Maintain erosion control features through periodic inspection and maintenance, including cleaning dips and crossdrains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from culverts.
2. \_\_\_\_\_ Avoid using roads during wet periods if such use would likely damage the road drainage features.
3. \_\_\_\_\_ Grade road surfaces only as often as necessary to maintain a stable running surface and to retain the original surface drainage.
4. \_\_\_\_\_ Avoid cutting the toe of cut slopes when grading roads and pulling ditches.
5. \_\_\_\_\_ Ensure crossdrains, culverts, waterbars, dips and other drainage structures do not discharge onto erodible soils or fill slopes without outfall protection.
6. \_\_\_\_\_ Provide energy dissipators where necessary at the downstream end of the ditch relief culverts to reduce the erosion energy of the emerging water.
7. \_\_\_\_\_ Ensure that roads are fully surfaced between each stream crossing and the nearest road drainage structure to prevent the road surface from adding sediment that harms channel stability or aquatic habitat.
8. \_\_\_\_\_ Prevent downslope movement of sediment by using sediment catch basins, drop inlets, changes in the road grade, headwalls, or recessed cut slopes.

9. \_\_\_\_ If grading produces excess material, feather it out or haul it to a safe disposal site. Never sidecast material into streams. Avoid leaving a berm that channels water down the road unless it is routed into an effective vegetation filter which spreads it out and removes the sediment.
  10. \_ Floatable debris should be cleaned from drainage ditches that direct water to culverts.
  11. \_ Close roads not built for all-weather use during periods of major rainfall and surface runoff.
- Road or Trail Obliteration/Decommissioning

1. \_\_\_\_ Scarifying the road or trail to prepare the seed bed for revegetation. Scarification should be no deeper than 4 inches. Seed within 24 hours of seedbed preparation.
2. Seeding the road or trail. Seed mix can should be recommended by Soil Scientist, Range Conservationist, or Ecologist. Native seed is preferable, and should be weed free. Fertilizing may also be recommended.
3. Installing or construction of waterbars or other drainage structures. Soil Scientist, Hydrologist or Engineer may assist in determining proper drainage spacing.
4. Brushing in the road or trail for the first 500 feet. This deters future use and makes the road less visible, also acts to slow runoff and trap sediment.
5. Brushing or mulching any road within 100 feet of water. This is to create a buffer between the road and stream.
6. Remove culverts and cattleguards and unstable fills.
7. Outslope the road or trail to recontour to reestablish drainage-ways and pulling back unstable road shoulders.
8. Remove road and trail signs.

#### Road or Trail Reconstruction/Realignment

1. \_\_\_\_ Reconstruct existing roads and trails only to the extent necessary to provide adequate drainage and safety.
2. \_\_\_\_ Provide adequate drainage by using rolled grade dips, outsloping or crowned roads, drain dips, or insloped roads with ditches and cross drains.
3. \_\_\_\_ Avoid disturbing stable road surfaces.
4. \_\_\_\_ Do not disturb roadside vegetation more than necessary to maintain slope stability and to serve traffic needs.
5. \_\_\_\_ Minimize earth-moving activities when soils appear excessively wet.
6. \_\_\_\_ Avoid letting excess, debris, overburden or waste materials enter streams or placing on unstable areas.
7. \_\_\_\_ Route road drainage through buffer strips, filtration fields, or other sediment settling structures.

8. \_\_\_\_\_ Install road drainage features above stream crossings to route discharge into filtration zones before entering a stream.
9. \_\_\_\_\_ Ensure that roads approach stream crossings on grades that minimize erosion.
10. \_ Align stream crossings perpendicular to channels.

References:

FSH 2509.25 Soil and Water Conservation Practices Handbook

FSM 7700 Road Management Policy

FSM 7712 Road Maintenance

36 CFR 212.1 Road Reconstruction

FSM 7703 and 36CFR 212.1 Road Decommissioning

Water Quality and Erosion Control Manual, PSICC 1993

Water/Road Interaction Guide San Dimas Technology and Development Center

## **XII. \_\_\_\_\_ Appendix E – Maps: Mangement Areas, ROS Classes, Roadless Areas**

## DECISION RECORD

AND

### FINDING OF NO SIGNIFICANT IMPACT

Fourmile Travel Management Plan

USDI Bureau of Land Management  
Royal Gorge Field Office

Chaffee County, Colorado

**SUMMARY:** I have decided to implement the Proposed Action, with selected mitigation measures, for the Fourmile Travel Management Plan, as assessed and described below in detail.

**INTRODUCTION:** The Environmental Assessment (EA) that discusses and analyzes the proposed activities is available for review at the Salida Ranger District office, 325 W. Rainbow Blvd., Salida, Colorado, phone (719) 539-3591 and the Royal Gorge Field Office, 3170 East Main St., Canon City, Colorado, phone (719) 269-8500. All documents and maps may also be viewed on-line at: <http://www.fs.fed.us/r2/psicc/sal/fourmile.htm>.

This document describes my decision and rationale for the Fourmile Travel Management Plan on the public lands of the Royal Gorge Field Office. The EA includes national forest lands managed by the Salida Ranger District of the San Isabel National Forest. Although the decisions may be discussed in common and the two documents make look very similar, this document only covers the decisions on BLM public lands portion of the Assessment Area.

Under the regulations of the Council on Environmental Quality (CEQ) for implementation of the National Environmental Policy Act (NEPA) of 1969, an Environmental Assessment (EA) was prepared to determine whether the proposed action may cause significant environmental impacts (40 CFR 1500). A summary of the documentation showing this action does not require the preparation of an Environmental Impact Statement is found in the Finding of No Significant Impact portion of this document (see page 10).

The decision and finding is based on the environmental assessment of the proposed activities and alternatives for the Fourmile Travel Management Plan and the goals and objectives stated in the Royal Gorge Resource Management Plan (RMP).

**BACKGROUND:** The 100,622-acre project area is located east of Buena Vista, Colorado. It includes 74% National Forest System Lands, 13% BLM Public Lands, 4% Colorado State Land Board, and 9% Private lands. Again, this decision only covers BLM public lands. A separate decision document will be released for the Forest Service portion of the analysis area. (EA, pg I-1)

The differences in travel management policies between the Forest Service and BLM (also referred to collectively as “agencies” in this document) often make it difficult for recreation travelers in the area to follow the existing transportation system.

The Fourmile area was identified in the Upper Arkansas River Valley Assessment (USDA Forest Service, 1999) as a high management priority to address recreation, soils, and forest health concerns (EA, pgs. I-1-2). All the watersheds in this area have been rated as “limited” or “degraded” in the Inland West Watershed Initiative (IWWI) (USDA Forest Service, 1997) (EA, pgs. III-3-6), in part due to roads and road conditions.

The proposed action is to designate and uniformly sign a system of roads and trails in the Fourmile Area. The authorized roads and trails (routes) will become part of both agencies official transportation system. This action identifies what types of use are authorized on each route, establishes information kiosk locations, imposes seasonal limitations on certain routes, authorizes certain non-motorized routes, and closes some unauthorized routes (referred to as Ghost Roads and Trails in the Citizens Proposal).

Refer to the EA, pages I-2 and I-3 for the detailed purpose and need for this project.

DECISION: It is my decision to implement the following actions:

The Proposed Action (as stated in the EA, page II-4), with selected route alterations as detailed below. The system will consist of approximately 197 miles of roads and trails. Of these, about 40 Forest Service miles (23 miles of motorized and 17 miles of non-motorized) and 21 BLM miles (4 miles of motorized and about 17 miles of non-motorized) would be trails. The remaining 137 miles would allow all forms of travel as roads (112 miles on Forest Service and 24 on BLM).

The map attached to this decision shows the new network of system roads and trails. This map is included in my decision.

This will include the following: *(NOTE: the agency or agencies that each decision applies to is listed in parentheses behind the bulleted item - Forest Service [FS] and/or Bureau of Land Management [BLM].)*

***From the EA, Page II-2, C., Actions Common to All Alternatives***

- Install standard travel management signs developed by the Colorado Natural Resource Group. These signs include a Trail sign and a Road Use sign. These signs will be used to designate routes. They will be located throughout the travel management area and will be found at trailheads, intersections, and other locations necessary to remind the user where they are and the types of uses allowed. [BLM and FS]

- Motorized travel will be restricted to designated roads and trails, referred to collectively as routes. A designated open route will be defined as one being signed for a particular use on the ground, and/or is printed as open on the Fourmile Area Travel Map. **[BLM and FS]**
- FS Special Use Permits and BLM Special Recreation Permits will continue to be issued by the authorized officer on a case-by-case basis. **[BLM and FS]**
- Individuals or groups with permits (e.g., livestock operations, mineral exploration and development, outfitter and guide operations, recreation events, utility easements/ rights-of-way, etc.) are allowed to access their permitted area. When and how the areas are accessed is set in the permit or annual operating plans. **[BLM and FS]**
- Access will be provided to private inholders, as required by Section 1323(a) of the Alaska National Interest Lands Conservation Act (P.L. 96-487; 16 U.S.C. 3210). **[BLM and FS]**
- There are 19 miles of routes on Colorado State Land (7.5 miles of authorized routes) and 58 miles of routes on private land. Opening, closing or modifying these routes are outside the scope of this plan. **[BLM and FS]**
- Any Federal, state, local official, or member of a rescue organization or fire-fighting organization, in the performance of an official duty related to emergency search and rescue, and/or fire suppression, will be exempt from travel restrictions, except in Wilderness or Wilderness Study Areas (Title 36 CFR 261.50 (e), Forest Service Manual 2355.32, Region 2 Supplement 2300-93-7) and Sec. 603(2) of FLPMA. **[BLM and FS]**
- All Federal and Colorado State laws applying to motorized vehicles are subject to enforcement. Title 36 CFR 261.12 and 261.13 regulate the operation of motorized vehicles on and off National Forest System Roads, respectively. The operation and use of vehicles on BLM lands is regulated by 43 CFR 8340. **[BLM and FS]**
- Non-motorized, non-mechanized cross-country travel will be allowed. **[BLM and FS]**
- Current snowmobile travel rules and regulations will not be affected under this plan. **[BLM and FS]**
- All roads and trails not identified as open will be closed and either rehabilitated or allowed to naturally rehabilitate. **[BLM and FS]**

***From the EA, Page II-3, D., Actions Common to the Proposed Action and Alternative C***

- Develop at least nine kiosks to provide users with the necessary information needed to understand the travel system, rules and regulations, user ethics, such as Tread Lightly and Leave No Trace, and other information pertinent to those recreating in the area. The location of these kiosks will be at the following intersections:

- § County Road 371 and 375 [BLM]
- § County Road 304 and Hwy 285 [BLM]
- § Ruby Mountain Recreation Site and Bald Mountain Road [BLM]
- § Trout Creek Pass and Hwy 285 [FS]
- § Mushroom Gulch and County Road 307 [FS]
- § Shields Gulch and Hwy 285 [FS]
- § McGee Gulch and Hwy 285 [FS]
- § Chinaman's Gulch and County Road 301 [BLM]
- § Castle Rock Gulch and County Road 307 [FS]

- Produce a map of the area showing the roads and trails authorized for use and designated as open. The map will provide the public with the types of use allowed on a particular road or trail and provide additional information for the public's benefit. [BLM and FS]
- Mechanized travel (such as mountain bikes and other non-motorized, wheeled travel, game retrieval carts, strollers) will be restricted to designated roads and trails. See definition of "designated" under Actions Common to All Alternatives, and the Glossary. Under this decision, mechanized travel will be allowed on all open designated system routes in the Fourmile Area outside the Wilderness and Wilderness Study Area. [BLM and FS]
- Direct motor vehicle travel to a suitable parking site will be allowed within 100 feet of a designated road or trail if travel does not damage the land or streams. [BLM and FS]
  - Acquisition of a "Public Easement" across private lands in Arnold Gulch and 300C road to provide access to the FSR 300 (Bald Mountain Gulch Road) was pursued and denied. Therefore, under this decision, the existing road will remain in its current location, until the following route can be constructed and improved.
  - Construct approximately ½ mile of new road in T. 14S, R 78W, Section 12, NE ¼ of the SE ¼, which will be a reroute and status change from an ATV trail to a 4 wheel drive road of the 300C1 route. The new 300C1 road will be connected to the 300C ATV trail, which will be improved to a 4 wheel drive road. At the time this route is complete, the section of the existing 300 road will be closed from the intersection of the 300ATV1 to the intersection of 300C road. This new route will provide access like the existing 300 route alignment, but will eliminate several spring and riparian area crossings. [BLM and FS]

***From the EA, Page II-5 through 9, the following mitigation measures***

1. Route closures and rehabilitation will include adequate, self-sustaining drainage, revegetation (with native plant species), and closure to discourage future use. Remove culverts and berms, if present. Check channel bottoms around culverts to ensure no headcutting occurs, and maintain natural grade. Banks around stream crossings will be

recontoured and revegetated. In live streams, wildlife friendly erosion matting, or other stabilizing material may need to be used to reduce sedimentation, until vegetation is established. [BLM and FS]

2. Maintenance of System roads:

- **Culverts** - Many system roads are adjacent to streams, and have the potential to contribute sediment to these streams. Inspect culverts for adequate drainage and proper function. Place energy dissipaters such as riprap below culvert outlet to trap sediment and reduce erosive energy, or relocate culverts to drain to a vegetated, low gradient area. [BLM and FS]
- **Riparian vegetation** - Willow and other roadside vegetation function as a buffer to trap sediment before being introduced to the stream, and serves to stabilize banks, when roads are adjacent to the streams. Willows are often cut very low for sight distance and safety, but at times, they are cut too low and die, losing their function as bank stabilizers. It is recommended that roads are maintained in such a manner that the willows are allowed to provide their many functions and benefits. [BLM and FS]
- **Road width/Ditch maintenance** – There are roads wider than standard width due to improper road maintenance practices. Future maintenance techniques should conform to the road specifications. [BLM and FS]
- **Improved drainage** – Apply additional drainage to those roads prone to rutting. Water bars will be constructed to prevent excessive rilling and gullyng. [BLM and FS]

3. Increase public education and awareness about avoiding driving on roads during wet conditions. [BLM and FS]
4. Develop a road and trail maintenance plan, including planning for the appropriate equipment to match the route type. [BLM and FS]
5. In accordance with the National Historic Preservation Act (NHPA), Forest Service Manual (FSM) 2360, and BLM Manual 8100, all significant cultural resources will be protected from harmful effects. Specifically, for the Fourmile project, all identified significant resources will be avoided by treatment activity. For proposed construction, and road/trail closure and rehabilitation, significant resources will be flagged for avoidance by vehicles, heavy equipment, and all other ground disturbing activities deriving from project implementation. With avoidance, no additional mitigation will be required. [BLM and FS]
6. Cultural resource sites that have been found to be eligible to the National Register of Historical Places (NRHP) will be stabilized from current erosional forces and vehicle access routes to sites obliterated and barriers constructed if warranted. A preservation plan should be developed between the Forest Service and Bureau of land Management

cultural resource staff, project managers and the State Historical Preservation Office (SHPO). [BLM and FS]

7. Each eligible cultural site will be evaluated as to whether the treatment has a beneficial or adverse effect. Adverse effects will be eliminated through avoidance; beneficial treatments will be tailored for each specific situation. Vehicle routes across sites will be closed, the closed tracks revegetated, and waterbars installed if necessary. In addition, treatments to stop current water erosion will be designed and implemented as needed. These might include seeding, waterbars, or other techniques. Standing structures will be signed to discourage use for camping and recreational users. [BLM and FS]
8. Inventory, treat, and monitor noxious weed infestations in the project area. [BLM and FS]
9. Wilderness and Wilderness Study Areas boundaries will be properly signed. [BLM and FS]
10. To minimize affects to potentially occurring threatened, endangered, or sensitive plants and animals, site-specific road closure and restoration will be reviewed by a Botanist and Biologist to survey for plant and animal species near closure and restoration sites. [BLM and FS]
11. Close the following roads and trails. Please note, a few changes have been made from the EA based on public comment. Some of the roads in this list are not being closed, but the status may be changed.

§ 311DGR – due to the number of intermittent stream crossings and archaeological concerns. [FS]

§ 311B and 376C – in the Environmental Analysis, these roads were proposed to be left open. Incorporating public comment, I have decided to keep the “Y” (311 and 373) portion open, and close the outside routes (311B and 376C). This still allows for a reduction in the road densities in this area. [BLM and FS]

§ A portion of 376B – After reviewing public comments, instead of closing the entire road as proposed in the EA, this road will be closed at a point near Sevenmile Creek. This closes approximately the northern most quarter mile of the road, and would assist in law enforcement concerns, and creek protection. [FS]

§ 373BRC1 – This existing closure will remain closed. Extensive rerouting and maintenance would be necessary to protect riparian and wildlife resources if this route were opened. [FS]

§ 376GR3B – this helps reduce route density to help meet Forest Plan standards. [FS]

§ 376GR7 – will reduce route density, provide for resource protection, limit roads in steep terrain, and protect riparian areas. [BLM]

§ 308BGR, 308C1 – is located in a wet area. Closing this route limits resource damage, soil compaction, and erosion. Non-motorized access parking will be provided at the north end. [FS]

§ Everything South of the 300ATV2 trail will be closed. This half-mile long trail dead ends, and affects Middle Cottonwood Creek. [FS]

§ 300 – This route will remain open until the reroute described above is completed. (see From the EA, page II-3, D. Actions Common to the Proposed Action and Alternative C, last bullet). [BLM and FS]

§ 300GR1, 300GR6, 300GR11, and 185GR5 & 6 – these routes are in the roadless area, which does not allow new roads to be designated, except for very specific reasons. These routes currently dead end into dispersed camping locations, and would not meet the criteria for keeping roads in an Inventoried Roadless Area. [FS]

§ 185EGR5 – will reduce road density in this area. [FS]

§ 375C – above the old Fourmile homestead to intersection of 375RC2 to protect riparian, cultural values, and allow for additional interpretation of the site. The Homestead site will be fenced. [FS]

§ A portion of the routes in the Turtle Rock area west of County Road 375 (NW ¼ NW ¼ Sec. 32, T14S, R78W) to reduce road density. [BLM]

§ 375EGR5 - to reduce road density. [FS]

§ 300GR4 – close approximately 100 yards in from the northeast end. [FS]

§ 185E – Close at an effective location between Columbine Gulch and private land. [FS]

12. Change the status of the following roads and trails. Please note, a few changes, including some road and trail's status, have been made from the EA to incorporate public comment.

§ Reroute a motorized trail from the closed portion of 375C over to 375CGR3. This will involve a reroute to the west around the homestead, and a corner of private land adjacent to BLM and Forest Service. This includes keeping 376GR3 open as a motorized trail to accomplish the reroute around private land [BLM and FS]

§ The 300C1 ATV trail will be rerouted and improved to a 4WD road to become part of the 300 road (see From the EA, page II-3, D. Actions Common to the Proposed Action and Alternative C, last bullet). [BLM and FS]

§ Extend road 311D approximately 2/10th of a mile to allow for a more practical terminus

and to provide for more dispersed camping further from private land. [FS]

§ Keep UR1-GR2 open as an ATV trail. This route is already an ATV trail, and is being changed from the suggested motorized single track based on public comment. [BLM]

§ Keep UR1-GR1 open as an ATV trail. This route is already an ATV trail, and is being changed from the suggested motorized single track based on public comment. [BLM]

§ Keep 376 UR2-GR1 open as an ATV trail. This route is already an ATV trail, and is being changed from the suggested motorized single track based on public comment as a single track, and reroute to the east of 376GR6. [BLM]

§ Change 376GR8 from a road to a motorized trail due to slopes. [BLM]

§ Confine and designate routes to manage and control Turtle Rock roads west of County Road 375 (NW ¼ NW ¼ Sec. 32, T14S, R78W). [BLM]

§ Reroute 308A away from the riparian area. [FS]

§ Change the 311 road from the junction of 311 and 373 to the junction of 311A, to a motorized trail to reduce road density. [FS]

§ From the Midland Railroad Grade one-half mile north to the junction of 376A change from a road to a non-motorized trail. [BLM and FS]

13. Install a bottomless arch culvert in the stream crossing of National Forest System Road 307 and Trout Creek in Section 10, T14S, R77W. [FS]

14. To limit use in stream channels and banks, place large rocks on braided areas, to make access less inviting, and rock and cable along banks. [BLM and FS]

15. Increase public education and awareness related to Wilderness Values. Properly sign and maintain non-motorized trails in the Wilderness and WSA. [BLM and FS]

16. Promote cooperative maintenance with counties and other agencies. [BLM and FS]

17. Where roadbeds intercept springs, an attempt would be made to reintroduce the water into the aquifer through proper drainage techniques. [BLM and FS]

18. Relocate the Buffalo Peaks Wilderness trailhead/parking area approximately one half mile south of its current location to improve driving safety. [FS]

19. Implement seasonal closures for resource protection such as when roads are susceptible to

rutting, and other road damage. Seasonal closures will be put into place for critical periods for elk, deer, and bighorn sheep. In general, these closures will be from December 1 to April 30, but will be based on local conditions. [BLM and FS]

Monitoring for this project will include the following:

- Seasonal monitoring for road closure effectiveness.
- Annual monitoring for new user-created routes.
- Rehabilitated areas will be monitored yearly for the first 5 years to determine the effectiveness.
- Travel plan violation citations will be compiled and evaluated annually to determine compliance.
- One-third of the routes will be assessed annually to determine maintenance effectiveness.

**RATIONALE:** The selected mix of actions and mitigation measures will best balance the resource needs and protection with recreational demands. I have determined this based on the findings and analysis in the Environmental Assessment, including supporting documentation and reports, and extensive public participation and involvement in this project.

This decision will meet or move towards meeting all RMP standards and guidelines.

**OTHER ALTERNATIVES CONSIDERED:** A description of the alternatives evaluated was presented in the EA. It also included a description of alternatives that were considered but eliminated from detailed analysis. The alternatives studied in this EA were defined in consideration of their technical, environmental, and economic feasibility and their ability to meet the purpose and need for the proposed project.

**Below is a summary of the alternatives analyzed in detail in the EA. Please refer to the EA, Chapter 2, for a more detailed description.**

- The **No Action Alternative** would authorize 253 miles of travel routes. This includes 242.5 miles of motorized routes and 10.5 miles of non-motorized trails. Current level of management intensity would not change. The widest spectrum of uses would occur under this alternative.
- The **Proposed Action** would authorize 194 miles of travel routes. This includes 160 miles of motorized routes and about 34 miles of non-motorized trails. This alternative blends motorized and non-motorized recreational opportunities more than the other alternatives.
- **Alternative C** would authorize 142 miles of travel routes. This includes 106.2 miles of motorized routes and 35.8 miles of non-motorized trails. Opportunities for motorized recreation would be reduced the most under this alternative. Resource values would be afforded greater protection.

**Alternatives considered but eliminated from further consideration:**

- **Authorized roads in the Roadless area:** Alternatives were discussed that would have made existing user created roads in the roadless area part of the authorized road system. This was dropped from consideration due to the conflict with the current roadless area direction, with the exception of the three roads discussed in Chapter 1 under Inventoried Roadless Area.
- **New routes across State Lands:** Consideration was given to designating new routes across State Lands. However, this decision is outside of the agencies' jurisdiction.

**SCOPING AND PUBLIC INVOLVEMENT:** The initial public scoping letter was sent on March 3, 2000 to 176 interested or potentially affected individuals, groups, organizations, state and other federal agencies, describing the proposal and encouraging comments and participation in the planning process. Advertisements were placed in the Chaffee County Times and Mountain Mail newspapers, asking the public to be involved in the decision making process.

The March 23, 2000 public meeting in Buena Vista was attended by 164 people. At this meeting, people were encouraged to join one of the four work groups for those who wanted to be involved in the Fourmile Travel Management decision-making process. The Citizens group met approximately twenty times. These meetings were open to all interested parties. Most of the meeting notes were posted on the Salida Ranger District's web page so all interested publics could see how the meetings were progressing.

The complete "Citizens Proposal for Travel Management in the Fourmile Area" (Citizen's Proposal) is incorporated by this reference and is located at the Salida Ranger District office.

The project was listed in the Schedule of Proposed Actions (SOPA), a Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands (PSICC), publication distributed four times a year to over 260 parties, from October, 1999 to April, 2002.

The 30-day comment period for the Environmental Assessment (EA) ran from March 18 to April 16, 2002. On March 15, 2002, a notice of availability was published in the Salida Mountain Mail, and mailed to those who had commented on the proposed action.

Copies were available for review on the PSICC website, and at libraries in Buena Vista, Salida, and Canon City. During this time, an open house was held on April 10, 2002 at the Buena Vista Community Center, to answer questions and take comments from the public on the project. Thirty-seven people attended the open house.

Fifty-four comments were received during this comment period. These letters are in the project file, and the list of commenters and the agencies response to comments are found in Appendix F to the Environmental Assessment. All comments have been considered in making this decision.

The Decision Record, Finding of No Significant Impact, and Appendix F, Response to

Comments, will be sent to those who commented on the EA. A letter stating the availability of the Decision Record and FONSI (Finding of No Significant Impact) will be sent to all individuals who have commented.

**FINDINGS:** The selected alternative, with mitigation measures, is consistent with the Resource Management Plan and the Federal Land Policy & Management Act (FLPMA). Mitigation measures for watershed, soils, fisheries, wildlife, range, fire/fuels, visual quality, recreation, cultural and land resources are expected to be feasible and effective in protecting natural resources in the area.

***Threatened, Endangered, and Sensitive Species***

The Field Office wildlife biologist and fisheries biologist made determinations for threatened, endangered or sensitive (TES) species currently listed by the US Fish and Wildlife Service, and made a determination of “may affect, not likely to adversely affect”.

Details may be found in the Environmental Assessment, pages III-37-54, and Appendix C.

***Cultural Resources***

Cultural resource surveys have been completed in portions of the project area. All cultural resource impacts will be mitigated through avoidance where possible. More details can be found in the EA, pages III-23-28.

**FINDING OF NO SIGNIFICANT IMPACT (FONSI):** The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. These proposals do not involve significant environmental impacts in context and intensity. The proposal, with approved mitigation measures, results in a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

1. Beneficial and adverse impacts were considered and there will be very few localized, short-term adverse effects. The overall long-term effects will be beneficial.
2. Public health and safety will not be adversely affected.
3. The project complies with all federal, state, and local law requirements. Government agencies were consulted on the project and had no objections to implementing the project. All decisions in this project are consistent with the interim direction for Inventoried Roadless Areas.
4. The proposed action will comply with the goals, objectives, and direction contained in the Royal Gorge Resource Management Plan, Record of Decision, and FEIS.
5. There are no unique characteristics about this geographic area not found elsewhere on the public lands. There are no prime farmlands, wetlands, floodplains, wild and scenic rivers

or ecologically critical areas that would be affected. There will be no significant adverse impacts to minority groups, civil rights, consumers, or environmental justice.

6. The effects on the quality of the human environment are considered not likely to be highly controversial. Extensive public involvement, including consultation with state and federal agencies, has not revealed any controversial effects. The environmental assessment was reviewed by the public for 30 days.
7. The effects are typical for this type of landscape project. Effects are not highly uncertain and do not involve unique or unknown risks. Mitigation measures that the agency has successfully used before will be effective in holding environmental effects at or below expectations.
8. The decision does not establish any future precedent for other actions that may have a significant effect. Future actions will be evaluated through the NEPA process and will stand on their own as to environmental effects.
9. Cumulative effects of past, present and foreseeable future projects have been considered and evaluated and do not substantially add to the effects described for the selected alternative. All known connected actions associated with the selected activities likely to occur in the future have been identified in the assessment and the direct, indirect and cumulative effects disclosed. They do not create any cumulatively significant impacts.
10. The action will not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. Cultural resources will be adequately protected by mitigation measures and other requirements.
11. A biological assessment and evaluation was completed to evaluate effects on threatened, endangered or sensitive species. The actions will not adversely affect any endangered or threatened species or its critical habitat, or any sensitive species.

In arriving at this conclusion, I have considered the potential effects in terms of Context and Intensity as described in 40 CFR 1508.27.

**PROTEST OPPORTUNITIES:** Any person who participated in the planning process and has an interest that is or may be adversely affected by the amendment of a resource management plan may protest such amendment. A protest may raise only those issues that were submitted for the record during the planning process.

The protest shall be in writing and shall be filed with the Director, at the following address:

Director (WO-210)  
Bureau of Land Management  
Attn: Brenda Williams, Protest Coordinator  
1849 C Street, N.W.  
Washington, DC 20240

For an amendment, the protest must be filed within 30 days of the publication of the notice of its effective date. The effective date is August 16, 2002.

The protest shall contain: 1) the name, mailing address, telephone number and interest of the person filing the protest; 2) a statement of the issue or issues being protested; 3) a statement of the part or parts of the amendment being protested; 4) a copy of all documentation addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and 5) a concise statement explaining why the State Director's decision is believed to be wrong.

The Director will promptly render a decision on the protest. The decision will be in writing and will set forth the reasons for the decision. The decision of the Director will be the final decision of the Department of the Interior.

The analysis file is available for public review at the Salida Ranger District Office, 325 W. Rainbow Blvd., Salida, CO 81201. Please direct questions about this Decision Record/FONSI to John Nahomenuk, Project Leader, Royal Gorge Field Office, 719-539-7289.

**SIGNATURE OF RECOMMENDING OFFICIAL:**

/s/ Roy L. Masinton  
Roy L. Masinton  
Field Manager  
Royal Gorge Field Office

12/16/02  
Date

## **APPROVAL**

It is my decision to approve the amendment for the Fourmile Travel Management Plan to the Royal Gorge Resource Management Plan, as described in the Royal Gorge Field Manager's recommendation, and analyzed in environmental assessment CO-200-2001-0065 EA.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Douglas M. Koza

DATE SIGNED: 01/13/03

**DECISION NOTICE  
AND  
FINDING OF NO SIGNIFICANT IMPACT**

Fourmile Travel Management Plan

USDA Forest Service  
Pike and San Isabel National Forests,  
Cimarron and Comanche National Grasslands  
Salida Ranger District  
Chaffee County, Colorado

**SUMMARY:** I have decided to implement the Proposed Action, with selected mitigations, for the Fourmile Travel Management Plan, as assessed and described below in detail.

**INTRODUCTION:** The Environmental Assessment (EA) that discusses and analyzes the proposed activities is available for review at the Salida Ranger District office, 325 W. Rainbow Blvd., Salida, Colorado, phone (719) 539-3591 and the Royal Gorge Field Office, 3170 East Main, Canon City, Colorado, phone (719) 269-8500. All documents and maps may also be viewed on-line at <http://www.fs.fed.us/r2/psicc/sal/fourmile.htm>

This document describes my decision and rationale for the Fourmile Travel Management Plan on the Salida Ranger District of the San Isabel National Forest. The EA includes public lands managed by the Royal Gorge Field Office of the Bureau of Land Management. Although the decisions may be discussed in common, this document only covers the National Forest System Lands portion of the Assessment Area.

Under the regulations of the Council on Environmental Quality (CEQ) for implementation of the National Environmental Policy Act (NEPA) of 1969, an Environmental Assessment (EA) was prepared to determine whether the proposed action may cause significant environmental impacts (40 CFR 1500). A summary of the documentation showing this action did not require the preparation of an Environmental Impact Statement is found in the Finding of No Significant Impact portion of this document.

The decision and finding is based on the environmental assessment of the proposed activities and alternatives for the Fourmile Travel Management Plan and the goals and objectives stated in the amended Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands, Land and Resource Management Plan (Forest Plan).

**BACKGROUND:** The 100,622-acre project area is located east of Buena Vista, Colorado. It includes 74% National Forest System Lands, 13% BLM Public Lands, 4% Colorado State Land Board, and 9% Private lands. Again, this decision only covers National Forest System Lands. A separate decision document will be released for the BLM portion of the analysis area. (EA, pg I-1)

The differences in travel management policies between the Forest Service and BLM (also referred to collectively as “agencies” in this document) often make it difficult for recreation travelers in the area to follow the existing transportation system.

The Fourmile area was identified in the Upper Arkansas River Valley Assessment (USDA Forest Service, 1999) as a high management priority to address recreation, soils, and forest health concerns (EA, pgs. I-1-2). All the watersheds in this area have been rated as “limited” or “degraded” in the Inland West Watershed Initiative (IWWI) (USDA Forest Service, 1997) (EA, pgs. III-3-6), in part due to roads and road conditions.

The proposed action is to designate and uniformly sign a system of roads and trails in the Fourmile Area. The authorized roads and trails (routes) will become part of both agencies official transportation system. This action identifies what types of use are authorized on each route, establishes information kiosk locations, imposes seasonal limitations on certain routes, authorizes certain non-motorized routes, and closes some unauthorized routes (referred to as Ghost Roads and Trails in the Citizens Proposal).

Refer to the EA, pages I-2 and I-3 for this project’s detailed purpose and need.

## **DECISION:**

It is my decision to implement the following actions:

The Proposed Action (as stated in the EA, page II-4), with selected route alterations as detailed below. The system will consist of approximately 197 miles of roads and trails. Of these, about 40 Forest Service miles (23 miles of motorized and 17 miles of non-motorized) and 21 BLM miles (4 miles of motorized and about 17 mile of non-motorized) would be trails. The remaining 137 miles would allow all forms of travel as roads (112 miles on Forest Service and 24 on BLM).

The map attached to this decision shows the new network of system roads and trails. This map is included in my decision.

This will include the following: *(NOTE: the agency or agencies that each decision applies to is listed in parentheses behind the bulleted item.* Forest Service [FS] and Bureau of Land Management [BLM])

### ***From the EA, Page II-2, C,. Actions Common to All Alternatives***

- Install standard travel management signs developed by the Colorado Natural Resource Group. These signs include a Trail sign and a Road Use sign. These signs will be used to designate routes. They will be located throughout the travel management area and will be found at trailheads, intersections, and other locations necessary to remind the user where they are and the types of uses allowed. [BLM and FS]

- Motorized travel will be restricted to designated roads and trails, referred to collectively as routes. A designated open route will be defined as one being signed for a particular use on the ground, and/or is printed as open on the Fourmile Area Travel Map. **[BLM and FS]**
- FS Special Use Permits and BLM Special Recreation Permits will continue to be issued by the authorized officer on a case-by-case basis. **[BLM and FS]**
- Individuals or groups with permits (e.g., livestock operations, mineral exploration and development, outfitter and guide operations, recreation events, utility easements/ rights-of-way, etc.) are allowed to access their permitted area. When and how the areas are accessed is set in the permit or annual operating plans. **[BLM and FS]**
- Access will be provided to private inholders, as required by Section 1323(a) of the Alaska National Interest Lands Conservation Act (P.L. 96-487; 16 U.S.C. 3210). **[BLM and FS]**
- There are 19 miles of routes on Colorado State Land (7.5 miles of authorized routes) and 58 miles of routes on private land. Opening, closing or modifying these routes are outside the scope of this plan. **[BLM and FS]**
- Any Federal, state, local official, or member of a rescue organization or fire-fighting organization, in the performance of an official duty related to emergency search and rescue, and/or fire suppression, will be exempt from travel restrictions, except in Wilderness or Wilderness Study Areas (Title 36 CFR 261.50 (e), Forest Service Manual 2355.32, Region 2 Supplement 2300-93-7) and Sec. 603(2) of FLPMA. **[BLM and FS]**
- All Federal and Colorado State laws applying to motorized vehicles are subject to enforcement. Title 36 CFR 261.12 and 261.13 regulate the operation of motorized vehicles on and off National Forest System Roads, respectively. The operation and use of vehicles on BLM lands is regulated by 43 CFR 8340. **[BLM and FS]**
- Non-motorized, non-mechanized cross-country travel will be allowed. **[BLM and FS]**
- Current snowmobile travel rules and regulations will not be affected under this plan. **[BLM and FS]**
- All roads and trails not identified as open will be closed and either rehabilitated or allowed to naturally rehabilitate. **[BLM and FS]**

***From the EA, Page II-3, D., Actions Common to the Proposed Action and Alternative C***

- Develop at least nine kiosks to provide users with the necessary information needed to understand the travel system, rules and regulations, user ethics, such as Tread Lightly and Leave No Trace, and other information pertinent to those recreating in the area. The location of these kiosks will be at the following intersections:

- § County Road 371 and 375 [BLM]
- § County Road 304 and Hwy 285 [BLM]
- § Ruby Mountain Recreation Site and Bald Mountain Road [BLM]
- § Trout Creek Pass and Hwy 285 [FS]
- § Mushroom Gulch and County Road 307 [FS]
- § Shields Gulch and Hwy 285 [FS]
- § McGee Gulch and Hwy 285 [FS]
- § Chinaman's Gulch and County Road 301 [BLM]
- § Castle Rock Gulch and County Road 307 [FS]

- Produce a map of the area showing the roads and trails authorized for use and designated as open. The map will provide the public with the types of use allowed on a particular road or trail and provide additional information for the public's benefit. [BLM and FS]
- Mechanized travel (such as mountain bikes and other non-motorized, wheeled travel, game retrieval carts, strollers) will be restricted to designated roads and trails. See definition of "designated" under Actions Common to All Alternatives, and the Glossary. Under this decision, mechanized travel will be allowed on all open designated system routes in the Fourmile Area outside the Wilderness and Wilderness Study Areas. [BLM and FS]
- Direct motor vehicle travel to a suitable parking site will be allowed within 100 feet of a designated road or trail if travel does not damage the land or streams. [BLM and FS]
- Acquisition of a "Public Easement" across private lands in Arnold Gulch and 300C road to provide access to the FSR 300 (Bald Mountain Gulch Road) was pursued and denied. Therefore, under this decision, the existing road will remain in its current location, until the following route can be constructed and improved.

Construct approximately ½ mile of new road in T. 14S, R 78W, Section 12, NE ¼ of the SE ¼, which will be a reroute and status change from an ATV trail to a 4 wheel drive road of the 300C1 route. The new 300C1 road will be connected to the 300C ATV trail, which will be improved to a 4 wheel drive road. At the time this route is complete, the section of the existing 300 road will be closed from the intersection of the 300ATV1 to the intersection of 300C road. This new route will provide access like the existing 300 route alignment, but will eliminate several spring and riparian area crossings. [BLM and FS]

***From the EA, Page II-5 through 9, the following mitigation measures***

1. Route closures and rehabilitation will include adequate, self-sustaining drainage, revegetation (with native plant species), and closure to discourage future use. Remove culverts and berms, if present. Check channel bottoms around culverts to ensure no headcutting occurs, and maintain natural grade. Banks around stream crossings will be recontoured and revegetated. In live streams, wildlife friendly erosion matting, or other

stabilizing material may need to be used to reduce sedimentation, until vegetation is established. [BLM and FS]

2. Maintenance of System roads:

§ **Culverts** - Many system roads are adjacent to streams, and have the potential to contribute sediment to these streams. Inspect culverts for adequate drainage and proper function. Place energy dissipaters such as riprap below culvert outlet to trap sediment and reduce erosive energy, or relocate culverts to drain to a vegetated, low gradient area. [BLM and FS]

§ **Riparian vegetation** - Willow and other roadside vegetation function as a buffer to trap sediment before being introduced to the stream, and serves to stabilize banks, when roads are adjacent to the streams. Willows are often cut very low for sight distance and safety, but at times, they are cut too low and die, losing their function as bank stabilizers. It is recommended that roads are maintained in such a manner that the willows are allowed to provide their many functions and benefits. [BLM and FS]

§ **Road width/Ditch maintenance** – There are roads wider than standard width due to improper road maintenance practices. Future maintenance techniques should conform to the road specifications. [BLM and FS]

§ **Improved drainage** – Apply additional drainage to those roads prone to rutting. Water bars will be constructed to prevent excessive rilling and gullyng. [BLM and FS]

3. Increase public education and awareness about avoiding driving on roads during wet conditions. [BLM and FS]

4. Develop a road and trail maintenance plan, including planning for the appropriate equipment to match the route type. [BLM and FS]

5. In accordance with the National Historic Preservation Act (NHPA), Forest Service Manual (FSM) 2360, and BLM Manual 8100, all significant cultural resources will be protected from harmful effects. Specifically, for the Fourmile project, all identified significant resources will be avoided by treatment activity. For proposed construction, and road/trail closure and rehabilitation, significant resources will be flagged for avoidance by vehicles, heavy equipment, and all other ground disturbing activities deriving from project implementation. With avoidance, no additional mitigation will be required. [BLM and FS]

6. Cultural resource sites that have been found to be eligible to the National Register of Historical Places (NRHP) will be stabilized from current erosional forces and vehicle access routes to sites obliterated and barriers constructed if warranted. A preservation plan should be developed between the Forest Service and Bureau of land Management cultural resource staff, project managers and the State Historical Preservation Office

(SHPO). [BLM and FS]

7. Each eligible cultural site will be evaluated as to whether the treatment has a beneficial or adverse effect. Adverse effects will be eliminated through avoidance; beneficial treatments will be tailored for each specific situation. Vehicle routes across sites will be closed, the closed tracks revegetated, and waterbars installed if necessary. In addition, treatments to stop current water erosion will be designed and implemented as needed. These might include seeding, waterbars, or other techniques. Standing structures will be signed to discourage use for camping and recreational users. [BLM and FS]
8. Inventory, treat, and monitor noxious weed infestations in the project area. [BLM and FS]
9. Wilderness and Wilderness Study Areas boundaries will be properly signed. [BLM and FS]
10. To minimize affects to potentially occurring threatened, endangered, or sensitive plants and animals, site-specific road closure and restoration will be reviewed by a Botanist and Biologist to survey for plant species near closure and restoration sites. [BLM and FS]
11. Close the following roads and trails. Please note, a few changes have been made from the EA based on incorporating public comment. Some of the roads in this list are not being closed, but the status may be changed.

§ 311DGR – due to the number of intermittent stream crossings and archaeological concerns. [FS]

§ 311B and 376C – in the Environmental Analysis, these roads were proposed to be left open. Incorporating public comment, I have decided to keep the “Y” (311 and 373) portion open, and close the outside route (311B and 376C). This still allows for a reduction in the road densities in this area. [BLM and FS]

§ A portion of 376B – After reviewing public comments, instead of closing the entire road as proposed in the EA, this road will be closed at a point near Sevenmile Creek. This closes approximately the northern most quarter mile of the road, and would assist in law enforcement concerns, and creek protection. [FS]

§ 373BRC1 – This existing closure will remain closed. Extensive rerouting and maintenance would be necessary to protect riparian and wildlife resources if this route were opened. [FS]

§ 376GR3B – this will help reduce route density to help meet Forest Plan standards. [FS]

§ 376GR7 – will reduce route density, provide for resource protection, limit roads in steep terrain, and protect riparian areas. [BLM]

- § 308BGR, 308C1 – is located in a wet area. Closing this route limits resource damage, soil compaction, and erosion. Non-motorized access parking will be provided at the north end. [FS]
  - § Everything South of the 300ATV2 trail will be closed. This half-mile long trail dead ends, and affects Middle Cottonwood Creek. [FS]
  - § 300 - This route will remain open until the reroute described above is completed. (see From the EA, page II-3, D. Actions Common to the Proposed Action and Alternative C, last bullet). [BLM and FS]
  - § 300GR1, 300GR6, 300GR11, and 185GR5 & 6 – these routes are in the roadless area, which does not allow new roads to be designated, except for very specific reasons. These routes currently dead end into dispersed camping locations, and would not meet the criteria for keeping roads in an Inventoried Roadless Area. [FS]
  - § 185EGR5 – will reduce road density in this area. [FS]
  - § 375C – above the old Fourmile homestead to intersection of 375RC2 to protect riparian, cultural values, and allow for additional interpretation of the site. The Homestead site will be fenced. [FS]
  - § A portion of the routes in the Turtle Rock area west of County Road 375 (NW ¼ NW ¼ Sec. 32, T14S, R78W) to reduce road density. [BLM]
  - § 375EGR5 - to reduce road density. [FS]
  - § 300GR4 – close approximately 100 yards in from the northeast end. [FS]
  - § 185E – Close at an effective location between Columbine Gulch and private land. [FS]
12. Change the status of the following roads and trails. ***Please note, a few changes, including some road and trail's status, have been made from the EA to incorporate public comment.***
- § Reroute a motorized trail from the closed portion of 375C over to 375CGR3. This will involve a reroute to the west around the homestead, and a corner of private land adjacent to BLM and Forest Service. This includes keeping 376GR3 open as a motorized trail to accomplish the reroute around private land [BLM and FS]
  - § The 300C1 ATV trail will be rerouted and improved to a 4WD road to become part of the 300 road (see From the EA, page II-3, D. Actions Common to the Proposed Action and Alternative C, last bullet). [BLM and FS]
  - § Extend road 311D approximately 2/10th of a mile to allow for a more practical

terminus and to provide for more dispersed camping further from private land. [FS]

- § Keep UR1-GR2 open as an ATV trail. This route is already an ATV trail, and is being changed from the suggested motorized single track based on public comment. [BLM]
  - § Keep UR1-GR1 open as an ATV trail. This route is already an ATV trail, and is being changed from the suggested motorized single track based on public comment. [BLM]
  - § Keep 376 UR2-GR1 open as an ATV trail. This route is already an ATV trail, and is being changed from the suggested motorized single track based on public comment as a single track, and reroute to the east of 376GR6. [BLM]
  - § Change 376GR8 from a road to a motorized trail due to slopes. [BLM]
  - § Confine and designate routes to manage and control Turtle Rock roads west of County Road 375 (NW ¼ NW ¼ Sec. 32, T14S, R78W). [BLM]
  - § Reroute 308A away from the riparian area. [FS]
  - § Change the 311 road from the junction of 311 and 373 to the junction of 311A, to a motorized trail to reduce road density. [FS]
  - § From the Midland Railroad Grade one-half mile north to the junction of 376A change from a road to a non-motorized trail. [BLM and FS]
13. Install a bottomless arch culvert in the stream crossing of National Forest System Road 307 and Trout Creek in Section 10, T14S, R77W. [FS]
  14. To limit use in stream channels and banks, place large rocks on braided areas, to make access less inviting, and rock and cable along banks. [BLM and FS]
  15. Increase public education and awareness related to Wilderness Values. Properly sign and maintain non-motorized trails in the Wilderness and WSA. [BLM and FS]
  16. Promote cooperative maintenance with counties and other agencies. [BLM and FS]
  17. Where roadbeds intercept springs, an attempt would be made to reintroduce the water into the aquifer through proper drainage techniques. [BLM and FS]
  18. Relocate the Buffalo Peaks Wilderness trailhead/parking area approximately one half mile south of its current location to improve driving safety. [FS]
  19. Implement seasonal closures for resource protection such as when roads are susceptible to

rutting, and other road damage. Seasonal closures will be put into place for critical periods for elk, deer, and bighorn sheep. In general, these closures will be from December 1 to April 30, but will be based on local conditions. [BLM and FS]

I will consider the following actions in a separate Decision Notice and Finding of No Significant Impact.

- 1) Road 300B1 on Bald Mountain creates a loop from 300B back to near the beginning of 300B. This route was recommended to provide a loop for one-way traffic for safety purposes.
- 2) The current 300C ATV route change to a four wheel drive road. This reroute will eliminate spring crossings on the current 300 road.

These are in an Inventoried Roadless Area, and the decision on authorizing this road will be considered at a later time.

Monitoring for this project will include the following:

- § Seasonal monitoring for road closure effectiveness.
- § Annual monitoring for new user-created routes.
- § Rehabilitated areas will be monitored yearly for the first 5 years to determine the effectiveness.
- § Travel plan violation citations will be compiled and evaluated annually to determine compliance.
- § One-third of the routes will be assessed annually to determine maintenance effectiveness.

**RATIONALE:** The selected mix of actions and mitigations will best balance the resource needs and protection with recreational demands. I have determined this based on findings and analysis in the Environmental Assessment, including supporting documentation and reports, and extensive public participation and involvement in this project.

This decision will meet or move towards meeting all Forest Plan goals, standards and guidelines.

**OTHER ALTERNATIVES CONSIDERED:** A description of the alternatives evaluated was presented in the EA. It also included a description of alternatives that were considered but eliminated from detailed analysis. The alternatives studied in this EA were defined in consideration of their technical, environmental, and economic feasibility and their ability to meet the purpose and need for the proposed project.

**Below is a summary of the alternatives analyzed in detail in the EA. Please refer to the EA, Chapter 2, for a more detailed description.**

- The **No Action Alternative** would authorize 253 miles of travel routes. This includes 242.5 miles of motorized routes and 10.5 miles of non-motorized trails. Current level of

management intensity would not change. The widest spectrum of uses would occur under this alternative.

- The **Proposed Action** would authorize 194 miles of travel routes. This includes 160 miles of motorized routes and about 34 miles of non-motorized trails. This alternative blends motorized and non-motorized recreational opportunities more than the other alternatives.
- **Alternative C** would authorize 142 miles of travel routes. This includes 106.2 miles of motorized routes and 35.8 miles of non-motorized trails. Opportunities for motorized recreation would be reduced the most under this alternative. Resource values would be afforded greater protection.

**Alternatives considered but eliminated from further consideration:**

- **Authorized roads in the Roadless area:** Alternatives were discussed that would have made existing user created roads in the roadless area part of the authorized road system. This was dropped from consideration due to the conflict with the current roadless area direction, with the exception of the three roads discussed in the EA, Chapter 1 under Inventoried Roadless Area. As noted above in this decision, these roads will be considered at a later time under a different Decision Notice.
- **New routes across State Lands:** Consideration was given to designating new routes across State Lands. However, this decision is outside of the agencies' jurisdiction.

**SCOPING AND PUBLIC INVOLVEMENT:** The initial public scoping letter was sent on March 3, 2000 to 176 interested or potentially affected individuals, groups, organizations, state and other federal agencies, describing the proposal and encouraging comments and participation in the planning process. Advertisements were placed in the Chaffee County Times and Mountain Mail newspapers, asking the public to be involved in the decision making process.

The March 23, 2000 public meeting in Buena Vista was attended by 164 people. At this meeting, people were encouraged to join one of the four work groups for those who wanted to be involved in the Fourmile Travel Management decision-making process. The Citizens group met approximately twenty times. These meetings were open to all interested parties. Most of the meeting notes were posted on the Salida Ranger District's web page so all interested publics could see how the meetings were progressing.

The complete "Citizens Proposal for Travel Management in the Fourmile Area" (Citizen's Proposal) is incorporated by this reference and is located at the Salida Ranger District office.

The project was listed in the Schedule of Proposed Actions (SOPA), a Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands (PSICC), publication distributed four times a year to over 260 parties, from October, 1999 to April, 2002.

The 30-day comment period for the Environmental Assessment (EA) ran from March 18 to April

16, 2002. On March 15, 2002, a notice of availability was published in the Salida Mountain Mail, and mailed to those who had commented on the proposed action.

Copies were available for review on the PSICC website, and at libraries in Buena Vista, Salida, and Canon City. During this time, an open house was held on April 10, 2002 at the Buena Vista Community Center, to answer questions and take comments from the public on the project. Thirty-seven people attended the open house.

Fifty-four comments were received during this comment period. These letters are in the project file, and the list of commenters and the agencies response to comments are found in Appendix F to the Environmental Assessment. All comments have been considered in making this decision.

The Decision Notice, Finding of No Significant Impact, and Appendix F, Response to Comments, will be sent to those who commented on the EA. A letter stating the availability of the Decision Notice and FONSI (Finding of No Significant Impact) will be sent to all individuals who have commented.

**FINDINGS:** The selected alternative, with mitigations, is consistent with the amended Forest Plan and the National Forest Management Act (NFMA). Mitigation measures for watershed, soils, fisheries, wildlife, range, fire/fuels, visual quality, recreation, heritage and land resources are expected to be feasible and effective in protecting natural resources in the area.

***Threatened, Endangered, and Sensitive Species, and Management Indicator Species***

The Forest and District wildlife biologists made determinations for threatened, endangered or sensitive (TES) species, as well as for all management indicator species (MIS) listed in the Forest plan. The US Fish and Wildlife Service sent a letter concurring with the finding of “may affect, not likely to adversely affect” determination on May 31, 2002, for threatened and endangered species. These reports and letters are part of the project file at the Salida District Office.

Details may be found in the Environmental Assessment, pages III-37-54, and Appendix C.

***Cultural Resources***

Cultural resource surveys have been completed in portions of the project area. All cultural resource impacts will be mitigated through avoidance where possible. More details can be found in the EA, pages III-23-28.

**FINDING OF NO SIGNIFICANT IMPACT:** I have determined that this is not a major federal action and will not significantly affect the quality of the human environment. Therefore, an environmental impact statement is not required. This determination is based on the following factors, substantiated in the environmental assessment and project record.

1. Beneficial and adverse impacts were considered and there will be very few localized, short-term adverse effects. The overall long-term effects will be beneficial.
2. Public health and safety will not be adversely affected.

3. The project complies with all federal, state, and local law requirements. Government agencies were consulted on the project and had no objections to implementing the project. All decisions in this project are consistent with the interim direction for Inventoried Roadless Areas.
4. The proposed action will comply with the goals, objectives, and direction contained in the amended Forest Plan, Record of Decision, and FEIS.
5. There are no unique characteristics about this geographic area not found elsewhere on the District or National Forest. There are no prime farmlands, wetlands, floodplains, wild and scenic rivers or ecologically critical areas that would be affected. There will be no significant adverse impacts to minority groups, civil rights, consumers, or environmental justice.
6. The effects on the quality of the human environment are considered not likely to be highly controversial. Extensive public involvement, including consultation with state and federal agencies, has not revealed any controversial effects. The environmental assessment was reviewed by the public for 30 days.
7. The effects are typical for this type of landscape project. Effects are not highly uncertain and do not involve unique or unknown risks. Mitigation measures that the agency has successfully used before will be effective in holding environmental effects at or below expectations.
8. The decision does not establish any future precedent for other actions that may have a significant effect. Future actions will be evaluated through the NEPA process and will stand on their own as to environmental effects.
9. Cumulative effects of past, present and foreseeable future projects have been considered and evaluated and do not substantially add to the effects described for the selected alternative. All known connected actions associated with the selected activities likely to occur in the future have been identified in the assessment and the direct, indirect and cumulative effects disclosed. They do not create any cumulatively significant impacts.
10. The action will not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. Cultural resources will be adequately protected by mitigation measures and other requirements.
11. A biological assessment and evaluation was completed to evaluate effects on threatened, endangered or sensitive species. The actions will not adversely affect any endangered or threatened species or its critical habitat, or any sensitive species.

In arriving at this conclusion, I have considered the potential effects in terms of Context and Intensity as described in 40 CFR 1508.27.

**ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITIES AND**

**IMPLEMENTATION DATE:** This decision is subject to appeal in accordance with 36 CFR 215.7. A Notice of Appeal must be in writing, must be fully consistent with 36 CFR 215.14. A written appeal must be submitted within 45 days of the day after notice of this decision is published in the newspaper of record, which is the The Mountain Mail, published daily in Salida, Chaffee County, Colorado to:

USDA, Forest Service, Region 2  
Attn: Appeals Deciding Officer  
PO Box 25127  
Lakewood, Colorado 80225

The publication date of this notice will be August 2, 2002. Appeals must be submitted on or before September 16, 2002.

The appellant is responsible for submitting an appeal on or before the last day of the appeal filing period. Where there is a question about timeliness, the U.S. Postal Service postmark on a mailed appeal or the time and date imprint on a facsimile appeal will be used to determine timeliness.

The analysis file is available for public review at the Salida Ranger District Office, 325 W. Rainbow Blvd., Salida, CO 81201. Please direct questions about this DN/FONSI to Mike Sugaski, Project Leader, Salida Ranger District, 719-539-3591.

Pursuant to 36 C.F.R. Sec. 215.10(a), if no appeal is filed, implementation of this decision may occur on, but not before, 5 business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of the appeal disposition (36 CFR 215.10(b)).

**SIGNATURE AND DATE**

/S/ Charles E. Medina

August 2, 2002

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Charles E. Medina, District Ranger  
Salida Ranger District  
San Isabel National Forest  
Responsible Official

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Date

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